MZ-R500

SERVICE MANUAL

Ver 1.0 2001. 01

US Model
Canadian Model
AEP Model
UK Model
E Model
Tourist Model

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Mechanism Type	MT-MZR500-172
Optical Pick-up Name	LCX-4R

SPECIFICATIONS

System

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 μW
(This output is the value measured at a distance of 200 mm from the lens surface on the optical pick-up block with 7 mm aperture.)
Recording and playback time
When using MDW-80
Maximum 160 min. in monaural
Maximum 320 min. in stereo
Revolutions
350 rpm to 2,800 rpm (CLV)
Error correction
ACIRC (Advanced Cross Interleave Reed Solomon Code)
Sampling frequency
44.1 kHz
Sampling rate converter
Input: 32 kHz/44.1 kHz/48 kHz
Coding
ATRAC (Adaptive TRansform Acoustic Coding)
ATRAC3-LP2
ATRAC3-LP4
Modulation system
EFM (Eight to Fourteen Modulation)
Number of channels
2 stereo channels
1 monaural channel
Frequency response
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Inputs
Line in: stereo mini-jack, minimum input level 49 mV
Optical (Digital) in: optical (digital) mini-jack
Outputs
🎧: stereo mini-jack, maximum output level 5 mW + 5 mW, load impedance 16 ohm

General

Power requirements
Sony AC Power adaptor connected at the DC IN 3 V jack (AEP, Chinese and Argentine models only):
230 V AC, 50/60 Hz (AEP model)
220 V AC, 50 Hz (Chinese model)
220 V AC, 50 Hz (Argentine model)
One LR6 (size AA) alkaline dry battery (not supplied)

– Continued on next page –

PORTABLE MINIDISC RECORDER

9-873-054-11
2001A0400-1
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Sony Corporation
Audio Entertainment Group
General Engineering Dept.

SONY®

Battery operation time

Battery life[1] (Unit: approx.hours) (EIAJ[2])

LR6 (SG) alkaline dry battery[3]	Normal	LP2	LP4
Recording[4]	7.5	10	13.5
Playback	36	42	48

1) The battery life may be shorter due to operating conditions, the temperature of the location, and varieties of batteries.
2) Measured in accordance with the EIAJ (Electronic Industries Association of Japan) standard.
3) When using a Sony LR6 (SG) “STAMINA” alkaline dry battery (produced in Japan).
4) To prevent interrupted recording due to drained battery, use new battery for recording operations.

Dimensions

Approx. 83.0 × 27.8 × 75.8 mm (w/h/d)
(3 3/8 × 1 1/8 × 3 in.) without projections.

Mass

Approx. 113 g (4.0 oz) the recorder only

Supplied accessories

AC power adaptor (AEP, Chinese and Argentine models only) (1)
Headphones/earphones (1)
Optical cable (AEP, Chinese and Argentine models only) (1)

Design and specifications are subject to change without notice.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

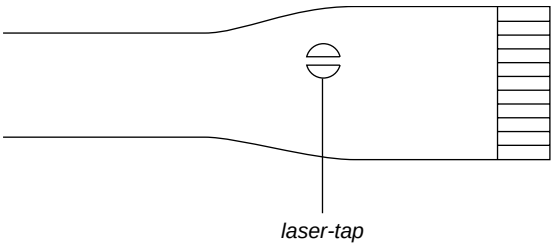
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right above when checking it for adjustment. It is feared that you will lose your sight.

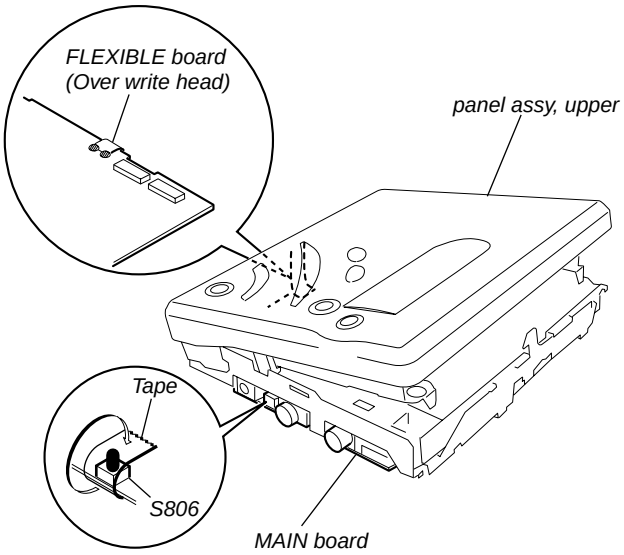
NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (LCX-4R)

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform measures against electrostatic break-down sufficiently before the operation. The flexible board is easily damaged and should be handled with care.



OPTICAL PICK-UP FLEXIBLE BOARD

- In performing the repair with the power supplied to the set, removing the MAIN board causes the set to be disabled.
  In such a case, fix a convex part of the open/close detect switch (S806 on MAIN board) with a tape in advance.
  Handle the FLEXIBLE board (overwrite head) with care, as it has been soldered directly to the MAIN board.
  In repairing the component side of MAIN board, connect the FLEXIBLE board (overwrite head) and the MAIN board with the lead wires in advance. (See page 8)



- Replacement of CDX2671-204GA (IC801) used in this set requires a special tool.

- On the set having the microcomputer version 1.000, some adjusted values were set in the manual mode at the shipment, but these data will be cleared when the NV is reset. Therefore, on the set having the microcomputer version 1.000, change the adjusted values following the Change of Adjusted Values immediately after the NV was reset. (See page 18)

- If the nonvolatile memory was replaced on the set, the modified program data must be written to the nonvolatile memory. In such a case, write the modified data that meets the microcomputer version following the patch data rewriting procedure at the replacement of nonvolatile memory. (See page 23)

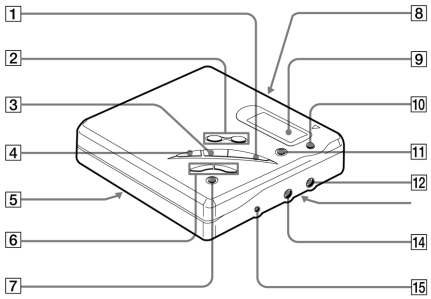
SECTION 2
GENERAL

This section is extracted from instruction manual.

Looking at the controls

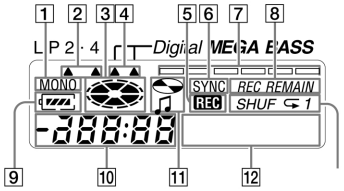
See pages in ( ) for more details.

The recorder



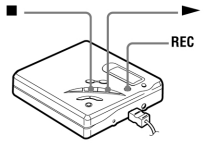
1 ► button (11) (13) (17) (24)
2 VOL +/– buttons (13) (28)
3 ■ button (11) (13) (25) (28)
4 ❚❚ button (11) (13) (19) (26) (28)
5 HOLD switch (at the rear) (9) (23)
6 ◄MENU► buttons (16) (21) (25)
I◄◄ /►►I (search /AMS) buttons (11) (13) (19) (27) (28)
7 ENTER button (16) (21) (25)
8 OPEN switch (9)
9 Display window (18) (21)
10 END SEARCH button (11) (28)
11 T MARK button (26)
REC (record) button (11) (17)
12 ∩ (headphones) jack (9) (24)
Battery compartment (at the rear) (8)
14 LINE IN (OPTICAL) jack (10) (16)
15 DC IN 3V jack (10) (30)

The display window



1 MONO (monaural) indication
2 LP mode indication (17)
3 Disc indication
Shows that the disc is rotating for recording, playing or editing an MD
4 Mega bass indication (22).
5 REC indication
Lights up while recording. When flashing, the recorder is in record standby mode.
6 SYNC (synchro-recording) indication (18)
7 Level meter (19)
Shows the volume of the MD being played or recorded.
8 REC REMAIN/REMAIN (remaining time/tracks) indication (20) (23)
Lights up along with the remaining time of the track, the remaining time of the MD, or the remaining number of tracks.
9 Battery indication (9)
Shows approximate battery condition.
10 Time display
11 Disc name/track name indication
Lights up when labeling a disc or a track.
12 Character information display (20) (23)
Displays the disc and track names, error messages, track numbers, etc.
Play mode indication (21)
Shows the play mode of the MD.

2 Record an MD.



① Press ► while pressing REC.
Recording starts.

② Play the source you want to record.

To stop recording, press ■.
After you press ■ and "Edit" stops falshing in the display, the recorder will automatically turn off after:
— about 10 seconds when using a battery.
— about 5 minutes when using the supplied AC power adaptor or the optional AC-E30HG (when an AC power adaptor is not supplied).

Notes

• "Saving" or "Edit" flashes while data of the recording (the track's start and end points, etc.) is being recorded. Do not move or jog the recorder or disconnect the power source while the indication is flashing in the display.
The lid does not open until "Edit" disappears in the display.

To	Press
Record from the end of the previous recording[1)]	END SEARCH and press ► while pressing REC.
Record partway through the previous recording[1)]	►, ►►I or I◄◄ to find the start point of recording and press ■ to stop. Then press ► while pressing REC.
Pause	❚❚[2)] Press ❚❚ again to resume recording.
Remove the MD	■ and open the lid.[3)] (The lid does not open while "Edit" flashing in the display.)

[1)] By setting "R-Posi" to "Fr End", recording operations will always start from the end of the previousely recorded material (page 18).
[2)] A track mark is added at the point where you press ❚❚ again to resume recording while pausing; thus the remainder of the track will be counted as a new track.
[3)] If you open the lid while "R-Posi" is set to "FrHere," recording will begin with the first track the next time you record (page 18).

If the recording does not start

Make sure the recorder is not locked (page 23).
Make sure the MD is not record-protected (page 31).
Premastered MDs cannot be recorded over.

For models supplied with the AC plug adaptor

If the AC power adaptor (supplied with the European, Chinese and Argentine models only) does not fit the wall outlet, use the AC plug adaptor.

Notes

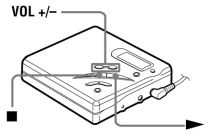
If the power supply is disrupted (i.e. the battery is removed or becomes exhausted or the AC power adaptor is disconnected) during a recording or editing operation, or while "Edit" appears in the display, then it will not be possible to open the lid until power is restored.
You can make a digital recording only from an optical type output.
When recording from a portable CD player, set the CD player to pause, and then do the recording procedure on the recorder.
Note the following when recording from a portable CD player:
—Some portable CD players may not be capable of digital out unless powered by the AC power.
—Connect the AC power adaptor to the portable CD player and use it on AC power as the power source.
—Disable any anti-skip function (such as ESP*) on the portable CD player.

* Electronic Shock Protection

LINE IN (OPTICAL) jack is for both digital and analog input. The recorder automatically recognizes the type of line cable and switches to digital or analog input.
The level of the recorded sound is adjusted automatically.
You can monitor the sound during recording. Connect the supplied headphones/earphones to ∩ and adjust the volume by pressing VOL +/–. This does not affect the recording level.

Playing an MD right away!

1 Play an MD.



① **Press ►.**

② **Press VOL +/– to adjust the volume.**
The volume will be shown in the display.

To stop play, press ■.
Playback starts from the point you last stopped playing.

After you press ■ and "Edit" stops flashing in the display, the recorder will automatically turn off after:

— about 10 seconds when using a battery.
— about 5 minutes when using the supplied AC power adaptor or the optional AC-E30HG (when an AC power adaptor is not supplied).

To	Press
Find the beginning of the current track	I◄◄ once
Find the beginning of the next track	►►I once
Pause	❚❚. Press ❚❚ again to resume play.
Go backwards while playing[1)]	keep pressing I◄◄.
Go forward while playing[1)]	keep pressing ►►I.
Remove the MD	■ and open the lid[2)].

[1)] To go backward or forward quickly without listening, press ❚❚ and keep pressing I◄◄ or ►►I.
[2)] Once you open the lid, the point to start play will change to the beginning of the first track.

G-PROTECTION function
The G-PROTECTION function has been developed to provide excellent protection against sound skipping during many active uses. This function provides a higher level of shock protection during playback than the traditional one.

If the play does not start
Make sure the recorder is not locked (page 23).

Playback will switch automatically between stereo and monaural according to the sound source.

Note
Sound may skip if:
—the recorder receives stronger continuous shock than expected.
—a dirty or scratched MiniDisc is played.

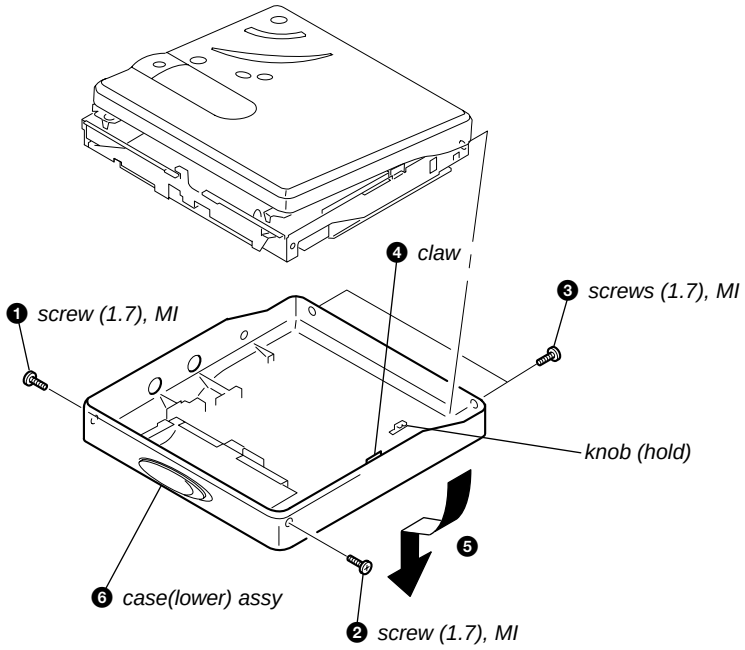
SECTION 3
DISASSEMBLY

Note : This set can be disassemble according to the following sequence.

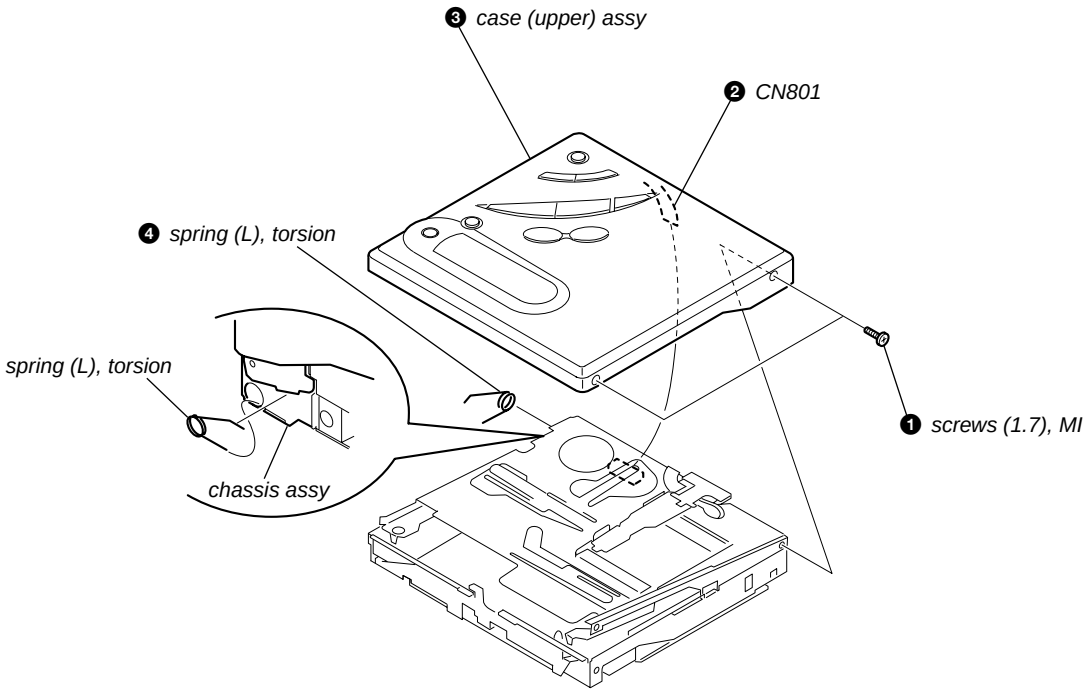
Set → Case (Lower) Assy → Case (Upper) Assy → LCD Module
Case (Lower) Assy → Main Board → MD Mechanism Deck
Case (Lower) Assy → Service Assy, OP → Holder Assy
Case (Lower) Assy → Motor Flexible Board
Case (Lower) Assy → Motor, DC (M602)
Case (Lower) Assy → "Motor, DC (M601)"," Motor, DC (M603)"

Note : Follow the disassembly procedure in the numerical order given.

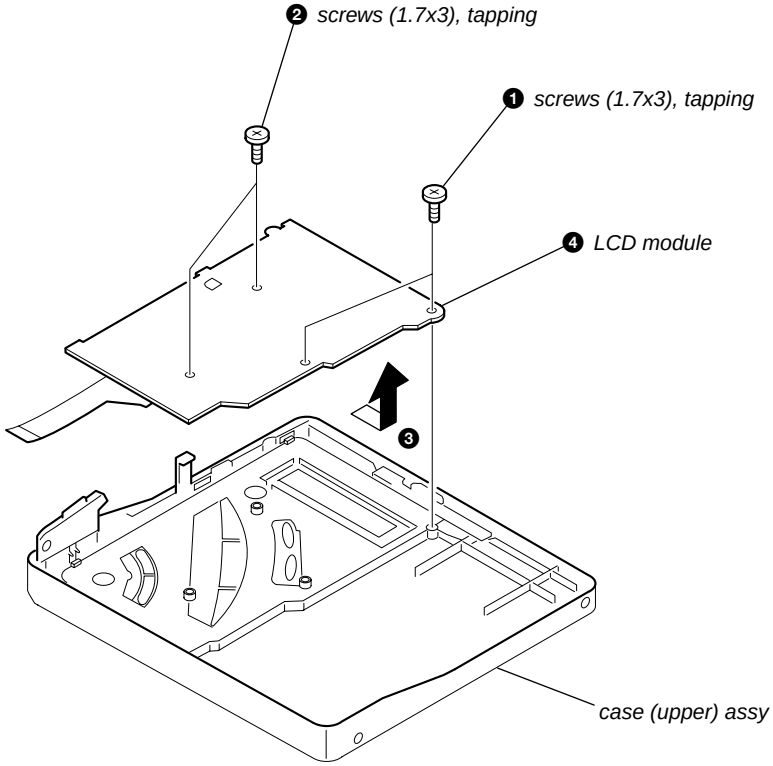
3-1. CASE (LOWER) ASSY



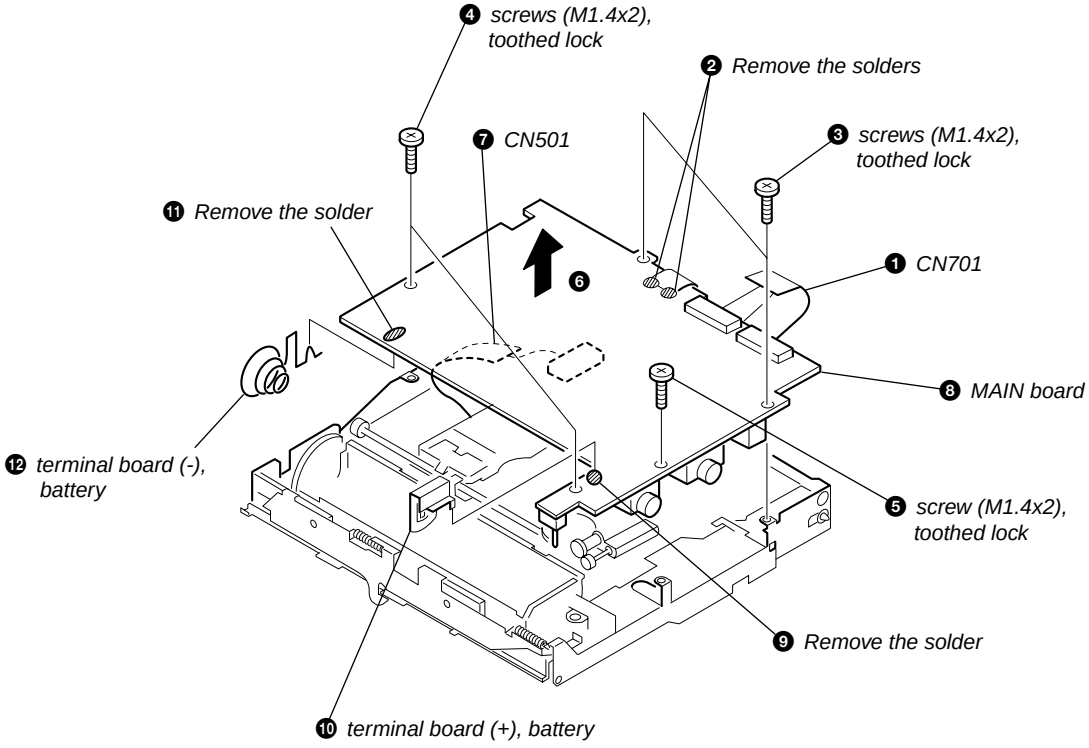
3-2. CASE (UPPER) ASSY



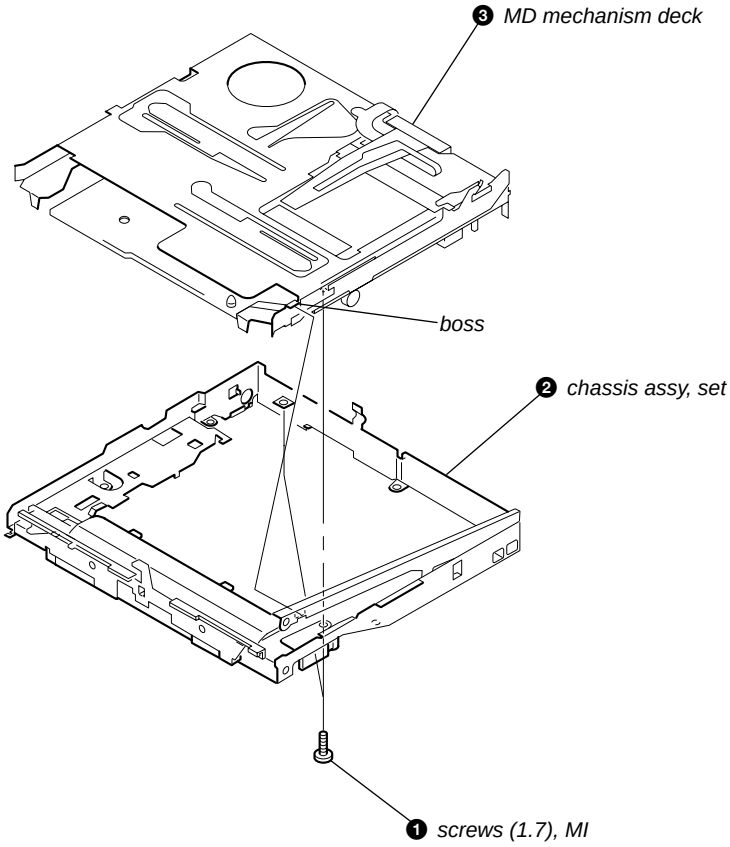
3-3. LCD MODULE



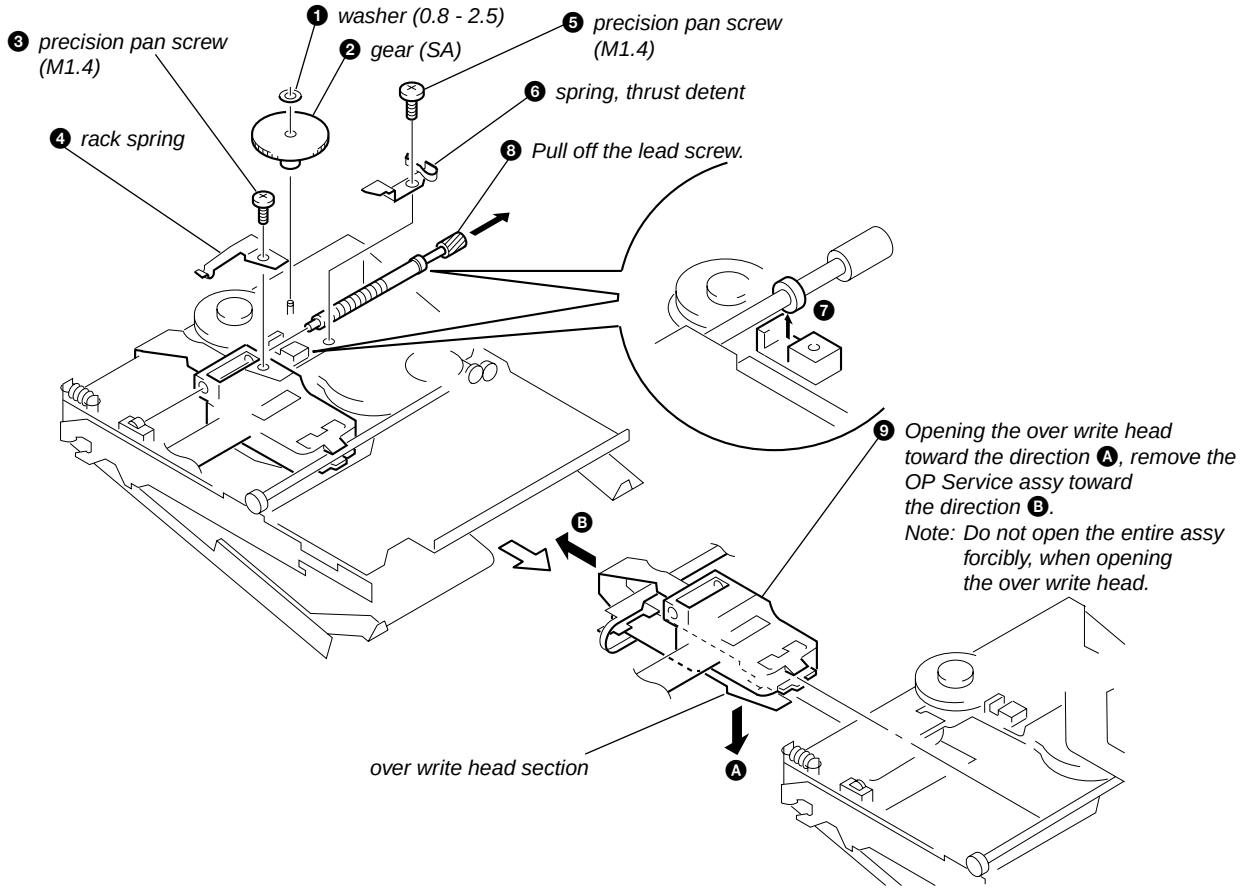
3-4. MAIN BOARD



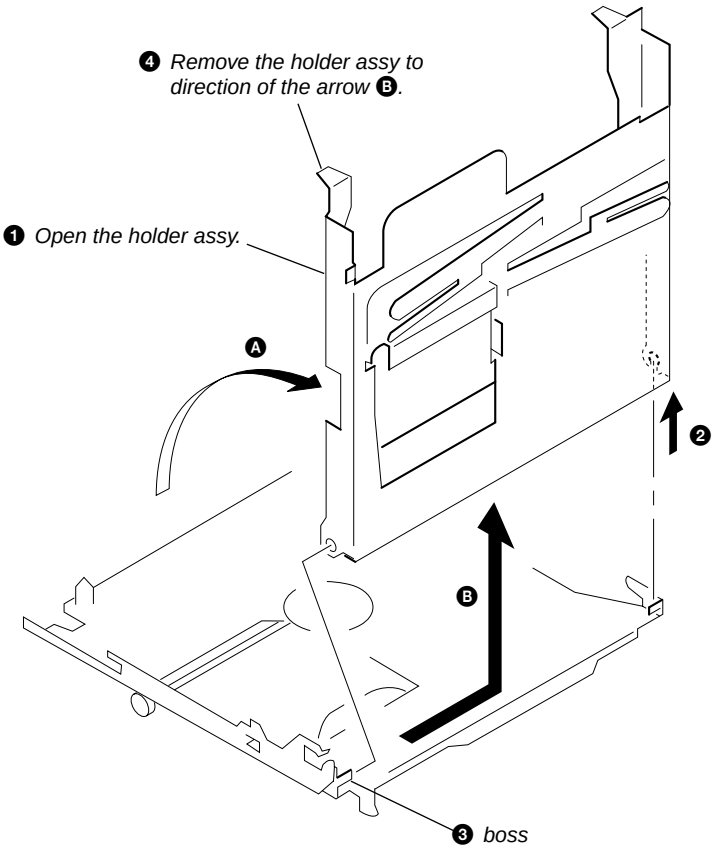
3-5. MD MECHANISM DECK



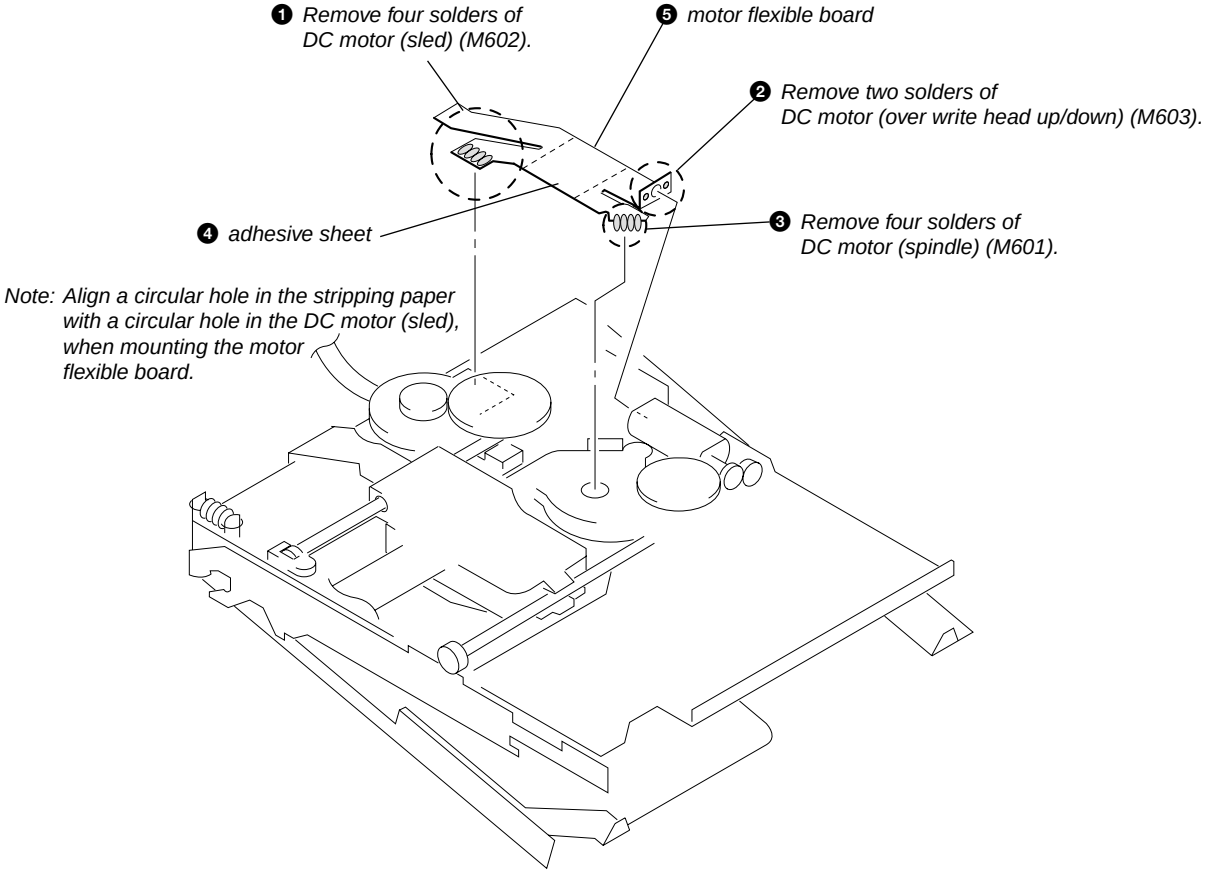
3-6. SERVICE ASSY, OP


❶ washer (0.8 - 2.5)
❷ gear (SA)
❸ precision pan screw (M1.4)
❹ rack spring
❺ precision pan screw (M1.4)
❻ spring, thrust detent
❼
❽ Pull off the lead screw.
❾ Opening the over write head toward the direction Ⓐ, remove the OP Service assy toward the direction Ⓑ.
Note: Do not open the entire assy forcibly, when opening the over write head.
Ⓑ
Ⓐ
over write head section

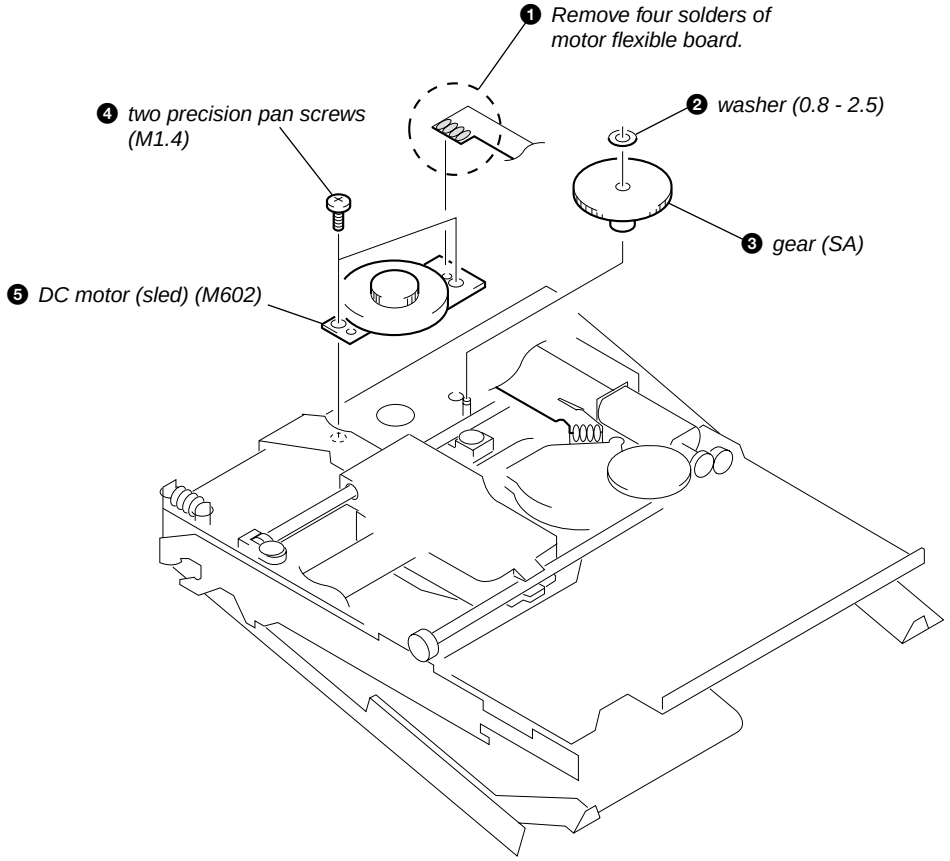
3-7. HOLDER ASSY



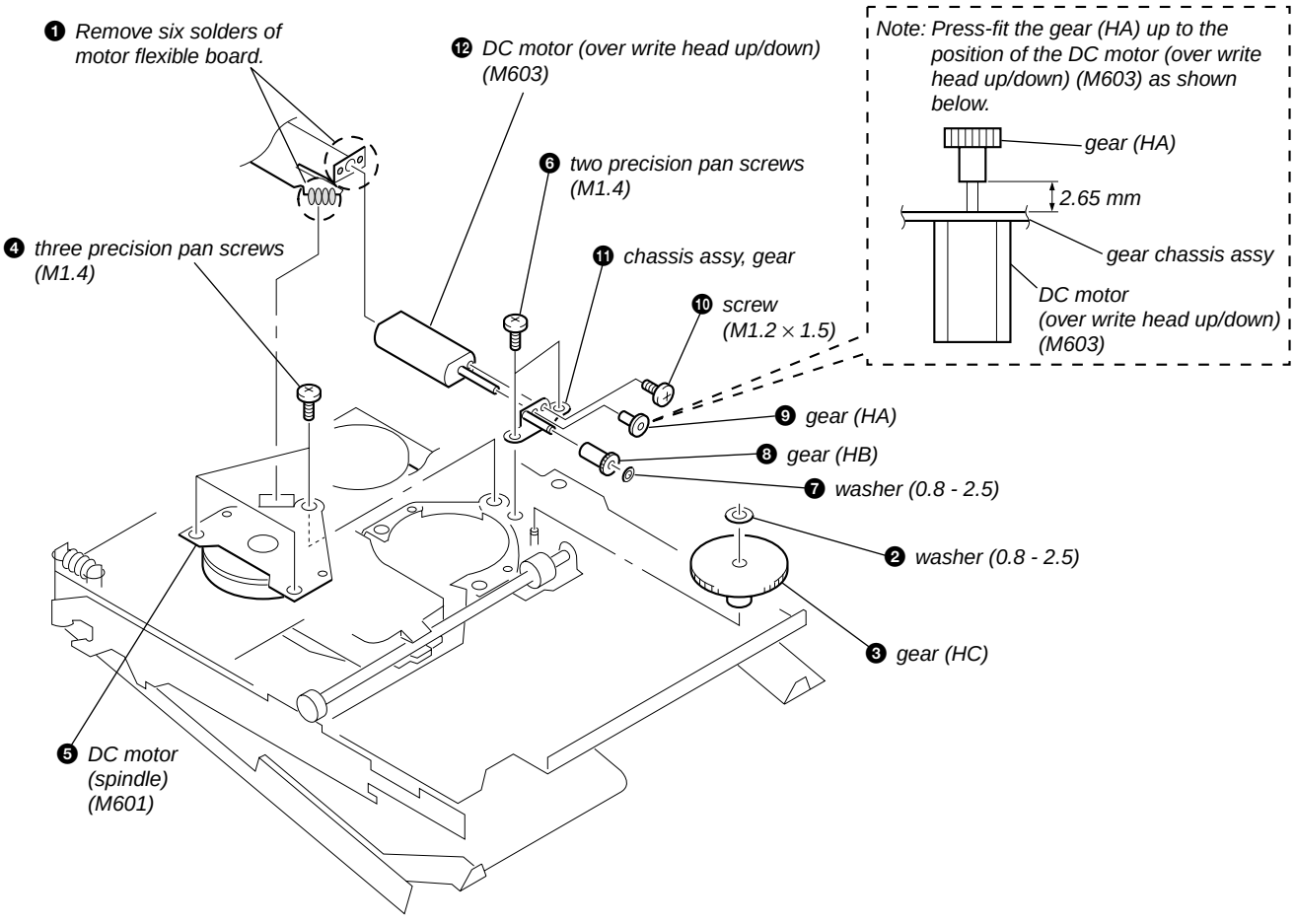
3-8. MOTOR FLEXIBLE BOARD


❶ Remove four solders of DC motor (sled) (M602).
❺ motor flexible board
❷ Remove two solders of DC motor (over write head up/down) (M603).
❹ adhesive sheet
❸ Remove four solders of DC motor (spindle) (M601).
Note: Align a circular hole in the stripping paper with a circular hole in the DC motor (sled), when mounting the motor flexible board.

3-9. MOTOR, DC (M602)



3-10. "MOTOR, DC (M601)", "MOTOR, DC (M603)"


❶ Remove six solders of motor flexible board.
⓬ DC motor (over write head up/down) (M603)
❻ two precision pan screws (M1.4)
❹ three precision pan screws (M1.4)
⓫ chassis assy, gear
❿ screw (M1.2 × 1.5)
❾ gear (HA)
❽ gear (HB)
❼ washer (0.8 - 2.5)
❷ washer (0.8 - 2.5)
❸ gear (HC)
❺ DC motor (spindle) (M601)
Note: Press-fit the gear (HA) up to the position of the DC motor (over write head up/down) (M603) as shown below.
gear (HA)
2.65 mm
gear chassis assy
DC motor (over write head up/down) (M603)

SECTION 4
TEST MODE

4-1. Outline

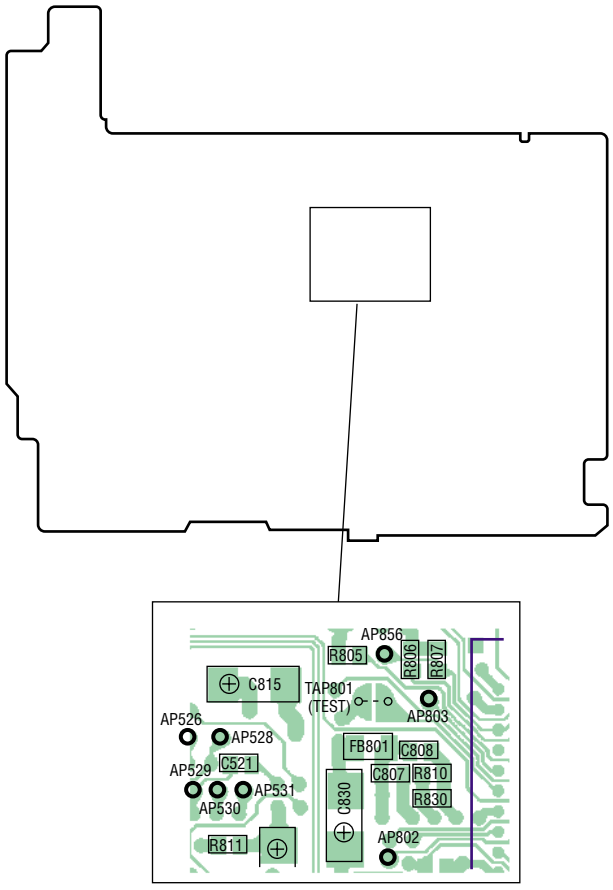
- This set provides the Overall adjustment mode that allows CD and MO discs to be automatically adjusted when in the test mode. In this overall adjustment mode, the disc is discriminate between CD and MO, and each adjustment is automatically executed in order. If a fault is found, the system displays its location. Also, the manual mode allows each individual adjustment to be automatically adjusted.

4-2. Setting Method of Test Mode

There are two different methods to set the test mode:

① Short TAP801 (TEST) on the MAIN board with a solder bridge (connect pin ③ of IC801 to the ground). Then, turn on the power.

【MAIN BOARD】(SIDE B)

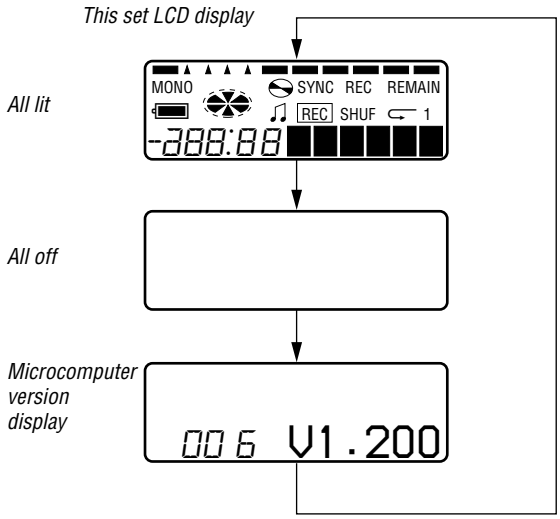


② In the normal mode, turn on the HOLD switch. While pressing the VOL – key press the following order:

⏭ → ⏭ → ⏮ → ⏮ → ⏭ →
⏮ → ⏭ → ⏮ → ⏸ → ⏸

4-3. Operation in Setting the Test Mode

- When the test mode becomes active, first the display check mode is selected.
- Other mode can be selected from the display check mode.
- When the test mode is set, the LCD repeats the following display.



- When the ⏸ key is pressed and hold down, the display at that time is held so that display can be checked.

Caution: On the set having the microcomputer version 1.000, some adjusted values were set in the manual mode at the shipment, but these data will be cleared when the NV is reset. Therefore, on the set having the microcomputer version 1.000, change the adjusted values following the Change of Adjusted Values immediately after the NV was reset (see page 18).

4-4. Releasing the Test Mode

For test mode set with the method ①:

Turn off the power and open the solder bridge on TAP801 (TEST) on the MAIN board.

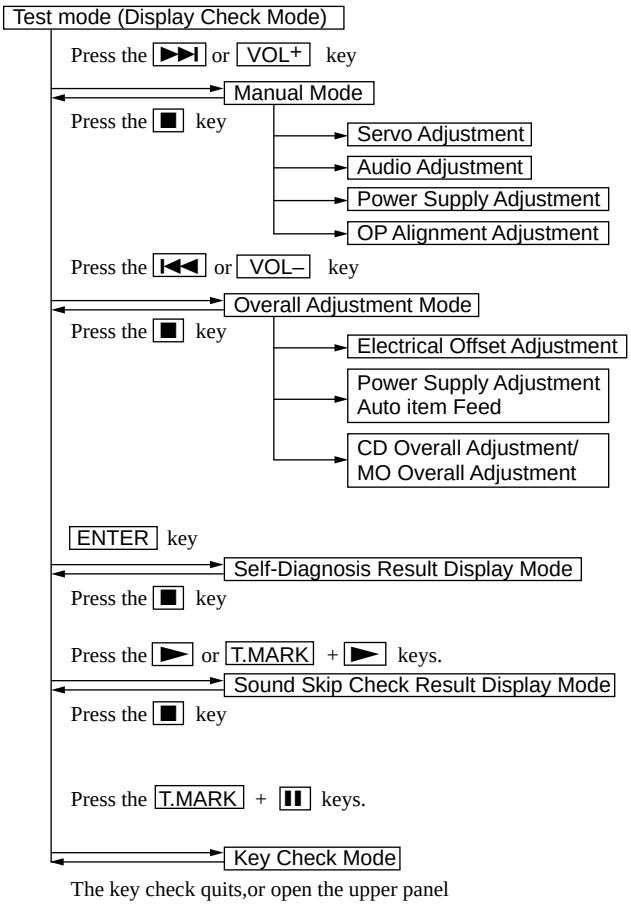
Note: Remove the solders completely. Remaining could be shorted with the chassis, etc.

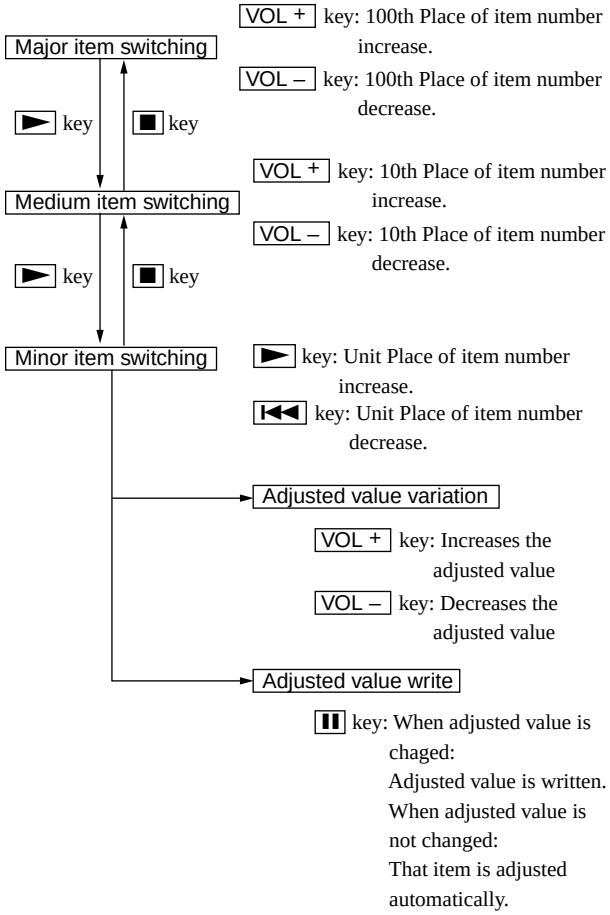
For test mode set with the method ②:

Turn off the power.

Note: If electrical adjustment (see page 18) has not been finished completely, always start in the test mode. (The set cannot start in normal mode)

4-5. Configuration of Test Mode


Test mode (Display Check Mode)
Press the ▶▶I or VOL+ key
Manual Mode
Press the ■ key
Servo Adjustment
Audio Adjustment
Power Supply Adjustment
OP Alignment Adjustment
Press the I◀◀ or VOL– key
Overall Adjustment Mode
Press the ■ key
Electrical Offset Adjustment
Power Supply Adjustment
Auto item Feed
CD Overall Adjustment/
MO Overall Adjustment
ENTER key
Self-Diagnosis Result Display Mode
Press the ■ key
Press the ► or T.MARK + ► keys.
Sound Skip Check Result Display Mode
Press the ■ key
Press the T.MARK + ❚❚ keys.
Key Check Mode
The key check quits,or open the upper panel


Major item switching
► key
■ key
Medium item switching
► key
■ key
Minor item switching
VOL + key: 100th Place of item number increase.
VOL – key: 100th Place of item number decrease.
VOL + key: 10th Place of item number increase.
VOL – key: 10th Place of item number decrease.
► key: Unit Place of item number increase.
I◀◀ key: Unit Place of item number decrease.
Adjusted value variation
VOL + key: Increases the adjusted value
VOL – key: Decreases the adjusted value
Adjusted value write
❚❚ key: When adjusted value is chaged:
Adjusted value is written.
When adjusted value is not changed:
That item is adjusted automatically.

4-6. Manual Mode

Mode to adjust or check the operation of the set by function. Normally, the adjustment in this mode is not executed. However, the Manual mode is used to clear the memory, power supply adjustment, and laser power check before performing automatic adjustments in the Overall Adjustment mode.

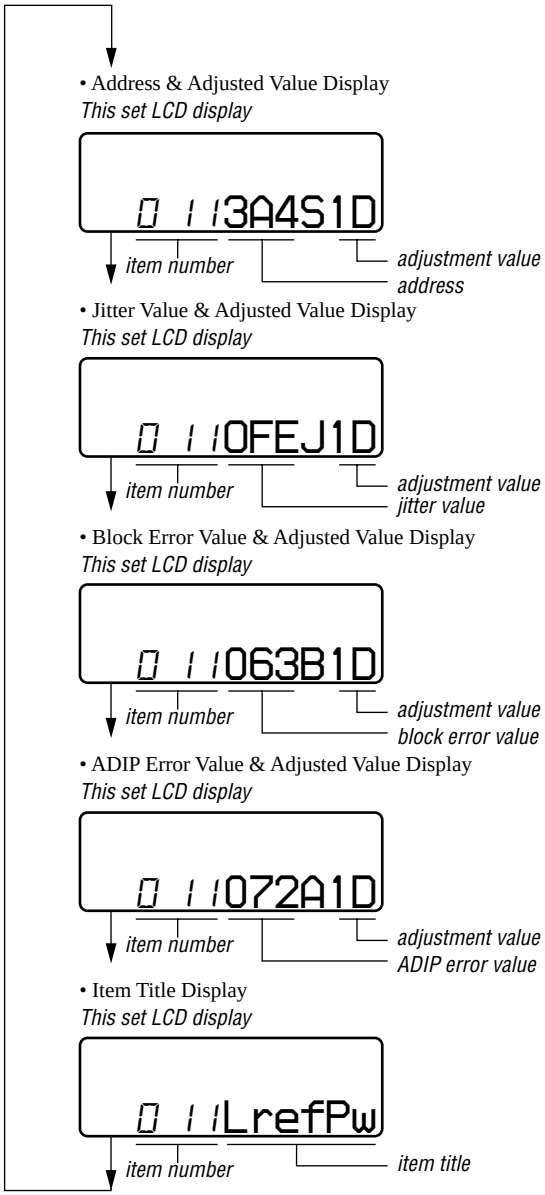
- **Transition method in Manual Mode**

1. Setting the test mode (see page 12).
2. Press the ▶▶I or VOL+ key activates the manual mode where the LCD display as shown below.

This set LCD display

3. During each test, the optical pick-up moves outward or inward while the ▶▶I or I◀◀ key is pressed for several seconds respectively.
4. Each test item is assigned with a 3-digit item number; 100th place is a major item, 10th place is a medium item, and unit place is a minor item.
   The values adjusted in the test mode are written to the nonvolatile memory (for the items where adjustment was made).

5. The display changes a shown below each time the ENTER key on the set is pressed.



However in the power mode (item number 700's), only the item is displayed.

6. Quit the manual mode, and press the ■ key to return to the test mode (display check mode).

4-7. Overall Adjustment Mode

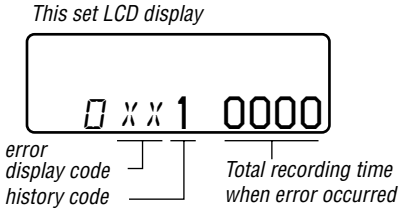
Mode to adjust the servo automatically in all items.
Normally, automatic adjustment is executed in this mode at the repair.
For further information, refer to "Section 5 Electrical Adjustments" (see page 18).

4-8. Self-Diagnosis Result Display Mode

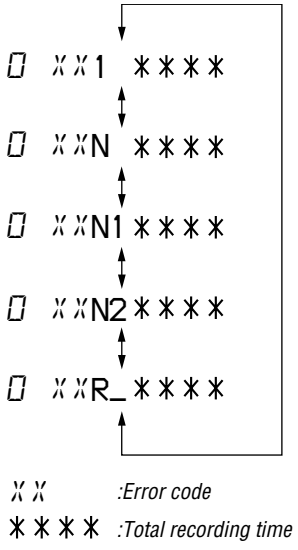
This set uses the self-diagnostic function system in which if an error occurred during the recording or playing, the mechanism control block and the power supply control block in the microcomputer detect it and record its cause as history in the nonvolatile memory.
By checking this history in the test mode, you can analyze a fault and determine its location.
Total recording time is recorded as a guideline of how long the optical pickup has been used, and by comparing it with the total recording time at the time when an error occurred in the self-diagnosis result display mode, you can determine when the error occurred.
Clear both self-diagnosis history data and total recording time, if the optical pickup was replaced.

• Self-Diagnosis Result Display Mode Setting Method

1. Setting the test mode (see page 12).
2. In the display check mode, press the ENTER key activates the self-diagnosis result display mode where the LCD display as shown below.



3. Then, each time the ▶▶I key is pressed, LCD display descends by one as shown below. Also, the LCD display ascends by one when the I◀◀ key is pressed.



4. Quit the self-diagnosis result display mode, and press the ■ key to return to the test mode (display check mode).

• Description of Error Indication Codes

Problem	Indication code	Meaning of code	Simple display	Description
No error	00	No error	---	No error
Servo system error	01	Illegal access target address was specified	Adrs	Attempt to access an abnormal address
	02	High temperature	Temp	High temperature
	03	Focus error	Fcus	Disordered focus
	04	Spindle error	Spdl	Abnormal rotation of disc
TOC error	11	TOC error	TOC	Faulty TOC contents
	12	Data reading error	Data	Data could not be read at SYNC
Power supply system error	22	Low battery	LBat	Momentary interruption detected
Offset system error	31	Offset error	Ofst	Offset error
	32	Focus error ABCD offset error	ABCD	Focus error ABCD offset error
	33	Tracking error Offset error	TE	Tracking error Offset error
	34	X1 tracking error Offset error	X1TE	X1 tracking error Offset error

• Description of Indication History

History code number	Description
1	The first error
N	The last error
N1	One error before the last.
N2	Two errors before the last.
R_	Total recording time

4-9. Reset the error display code

After servicing, reset the error display code.

• Setting method of Reset the Error Display Code

1. Setting the test mode (see page 12).
2. Press ENTER key activates the self-diagnosis result display mode.
3. To reset the error display code, press the ▮▮ key (2 times) when the code is displayed (except "R_✱✱✱✱").
   (All the data on the 1, N, N1, and N2 will be reset)

4-10. Sound Skip Check Result Display Mode

This set can display the count of errors that occurred during the recording/playing for checking.

• Setting method of sound skip check result display mode

1. Set the test mode (see page 12).
2. Press the ► key or T.MARK + PLAY keys, and the playing or recording sound skip result display mode becomes active respectively where the LCD displays the following.

This set LCD display

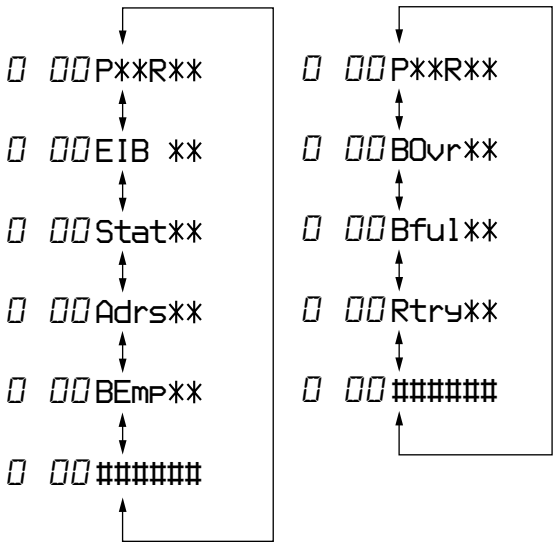
Total count of play system errors(hex.)

Total count record system errors(hex.)

3. When the ► key is pressed, total error count is displayed on the LCD, and each time the ▶▶I key is pressed, the display item moves down by one as shown below. Also, if the I◀◀ key is pressed, the display item moves up by one, then if the T.MARK + ► keys is pressed, the display in the record mode appears.
   When the T.MARK + ► keys is pressed, total error count is displayed on the LCD, and each time the ▶▶I key is pressed, the display item moves down by one as shown below. Also, if the I◀◀ key is pressed, the display item moves up by one, then if the ► key is pressed, the display in the play mode appears.

Playing sound skip result display

Recording sound skip result display



P**R** *:Total play/record errors(hex.)*
** *:Counter of sound skip check each item(hex.)*
####### *:6-digit address where sound was skipped last(hex.)*

• Cause of Sound Skip Error

	Cause of error	Description of error
Play	EIB	Sound error correction error
	Stat	Decoder status error
	Adrs	Address access error
	BEmp	Buffer is empty
Record	BOvr	Buffer is full, and sounds were dumped
	Bful	Buffer capacity becomes less, and forcible writing occurred
	Rtry	Retry times over

4. To quit the sound skip check result display mode and to return to the test mode (display check mode), press the ■ key.

4-11. Key Check Mode

This set can check if the set function normally.

• Setting Method of Key Check Mode

1. Setting the test mode (see page 12).
2. Press the T.MARK + ❚❚ keys activates the key check mode. (At the last two digits, AD value of remote commander key line is displayed in hexadecimal)

This set LCD display

3. When each key on the set and on remote commander is pressed, its name is displayed on the LCD. (The operated position is displayed for 4 seconds after the slide switch is operated. If any other key is pressed during this display, the remote commander LCD switches to its name display)

Example1: When ▶▶I key on the set is pressed:

This set LCD display

4. When all the keys on the set and on the remote commander are considered as OK, the following displays are shown for 4 seconds.

   Example1: When the keys on the set are considered as OK:

   This set LCD display

5. When all keys were checked or if the upper panel is opened, the key check mode quits and the test mode (display check mode) comes back.

SECTION 5
ELECTRICAL ADJUSTMENTS

5-1. Outline

- In this set, automatic adjustment of CD and MO can be performed by entering the test mode (see page 12).
  However, before starting automatic adjustment, the memory clear, power supply adjustment, and laser power check must be performed in the manual mode.
- A key having no particular description in the text, indicates a set key.
- For the LCD display, the LCD display on the set is shown.

5-2. Precautions for Adjustment

1. Adjustment must be done in the test mode only.
   After adjusting, release the test mode.
2. Use the following tools and measuring instruments.
   - Test CD disc TDYS-1
     (Part No. : 4-963-646-01)
   - SONY MO disc available on the market
   - Digital voltmeter
   - Laser power meter LPM-8001
     (Part No. : J-2501-046-A)
   - Thermometer (using the Temperature Correction)
3. Unless specified otherwise, supply DC 3V from the DC IN 3V jack (J601).
4. Switch position
   HOLD switch ..... OFF

5-3. Adjustment Sequence

1. NV Reset(Memory clear) ↓ — Manual Mode
2. Power Supply Manual Adjustment ↓ — Overall Mode
3. Temperature Correction(item number:014) ↓ — Manual Mode
4. Laser Power Check ↓ — Manual Mode
5. Electrical offset Adjustment ↓ — Overall Mode

Caution: This adjustment must be made with no disc loaded.

6. CD Overall Adjustment ↓ — Overall Mode
7. MO Overall Adjustment ↓ — Overall Mode
8. RESUME Clear — Manual Mode

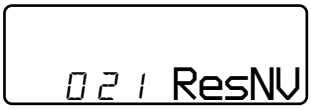
5-4. NV Reset

Caution: On the set having the microcomputer version 1.000, some adjusted values were set in the manual mode at the shipment, but these data will be cleared when the NV is reset. Therefore, on the set having the microcomputer version 1.000, change the adjusted values following the Change of Adjusted Values immediately after the NV was reset.

• Setting method of NV reset

1. Select the manual mode of the test mode, and set item number 021NV Reset (see page 13).

This set LCD display

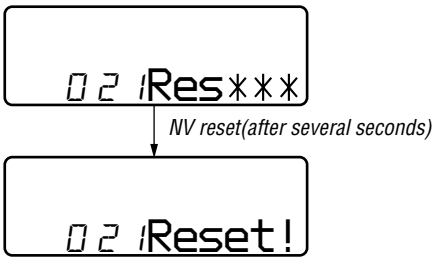


2. Press the [▮▮] key.

This set LCD display

3. Press the [▮▮] key once more.

This set LCD display



4. Press the [■] key to quit the manual mode, and activate the test mode (display check mode).

• Change of Adjusted Values

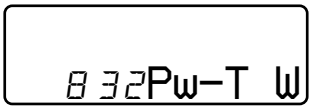
On the set having the microcomputer version 1.000, some adjusted values were set in the manual mode at the shipment, but these data will be cleared when the NV is reset. Therefore, on the set having the microcomputer version 1.000, modify the adjusted values through the following procedure immediately after the NV was reset.

1. Item numbers in which the adjusted values are to be modified
   Item number 832
   Item number 862
   Item number 871
   Item number 872

2. Adjusted values modifying procedure

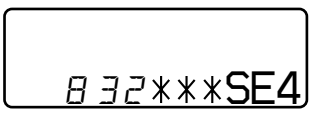
1) Select the manual mode of the test mode, and set item number 832 (see page 13).

This set LCD display



2) Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes E4.

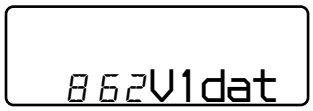
This set LCD display



***: Address*
E4: *Adjusted value*

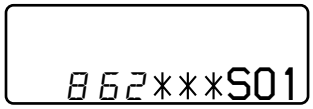
3) Press the [II] key to write the adjusted value.
4) Select the manual mode of the test mode, and set item number 862 (see page 13).

This set LCD display



5) Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 01.

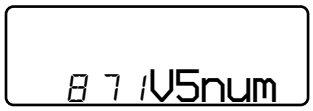
This set LCD display



***: Address*
01*: Adjusted value*

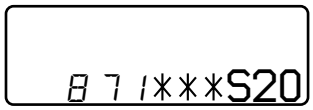
6) Press the [II] key to write the adjusted value.
7) Select the manual mode of the test mode, and set item number 871 (see page 13).

This set LCD display



8) Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 20.

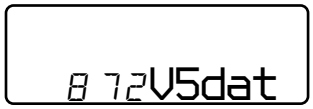
This set LCD display



***: Address*
20*: Adjusted value*

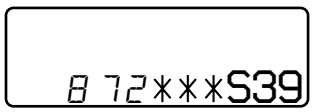
9) Press the [II] key to write the adjusted value.
10) Select the manual mode of the test mode, and set item number 872 (see page 13).

This set LCD display



11) Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 39.

This set LCD display



***: Address*
39*: Adjusted value*

12) Press the [II] key to write the adjusted value.

5-5. Power Supply Manual Adjustment

• Adjustment sequence

Adjustment must be done with the following steps.

1. Vc PWM Duty (L) adjustment (item number 762)
   ↓
2. Vc PWM Duty (H) adjustment (item number 763)
   ↓
3. Vl PWM Duty adjustment (item number 764)

• Setting method of power supply manual adjustment

1. Make sure that the power supply voltage is 3V.
2. Set the test mode (see page 12).
3. Press the [I◀◀] or [VOL–] key to activate the overall adjustment mode.

This set LCD display

4. Press the [END SEARCH] key. (the [END SEARCH] key causes the item number to be switched to 762.)

• Adjustment method of Vc PWM Duty (L) (item number: 762)

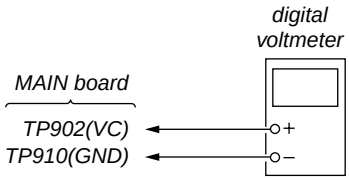
This set LCD display

1. Press the [ENTER] key and set the address & adjusted value display (see page 14).

This set LCD display

**: Adjusted value*

2. Connect a digital voltmeter to the TP902 (VC) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL –] key (voltage down) so that the voltage becomes 2.40 ± 0.01 V.



3. Press the [II] key to write the adjusted value.
(The item number changes to 763 when [II] key is pressed)

Adjustment and Connection Location: MAIN board (see page 21)

• Adjustment method of Vc PWM Duty (H) (item number: 763)

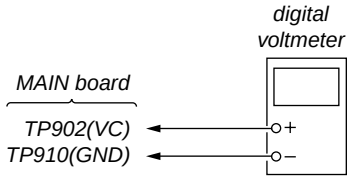
This set LCD display

1. Press the [ENTER] key and change the LCD display.

This set LCD display

**: Adjusted value*

2. Connect a digital voltmeter to the TP902 (VC) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL –] key (voltage down) so that the voltage becomes 2.75 ± 0.01 V.

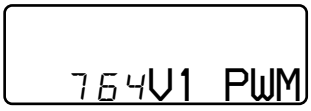


3. Press the [II] key to write the adjusted value.
(The item number changes to 764 when [II] key is pressed)

Adjustment and Connection Location: MAIN board
(see page 21)

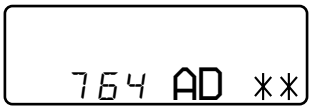
- **Adjustment method of VI PWM Duty (item number: 764)**

This set LCD display



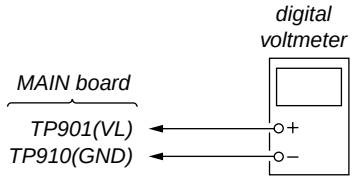
1. Press the [ENTER] key and change the LCD display.

This set LCD display



** : Adjusted value*

2. Connect a digital voltmeter to the TP901 (VL) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL –] key (voltage down) so that the voltage becomes 2.30 ± 0.01 V.



3. When press the [II] key to write the adjusted value, LCD displays as follows and power supply manual adjustment has completed.

This set LCD display

Adjustment and Connection Location: MAIN board

5-6. Temperature Correction

- **Adjustment Method of temperature correction**

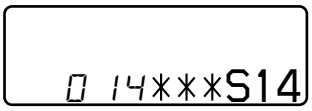
1. Select the manual mode of test mode, and set the mode number 014 (see page 13).

This set LCD display

2. Measure the ambient temperature.

3. Adjust with [VOL +], [VOL –] key so that the adjusted value (hexadecimal value) becomes the ambient temperature.
(Initial value: 14h = 20 °C, Adjusting range: 80h to 7fh (–128 °C to +127 °C)

This set LCD display

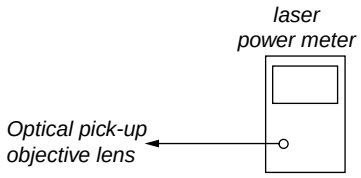


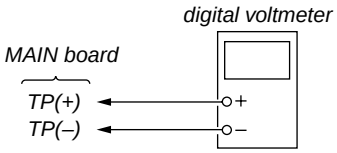
***: Address*
14*: Adjusted value*

4. Press the [II] key to write the adjusted value.

5-7. Laser Power Check

Connection :





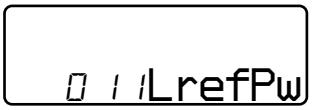
Checking Method :

1. Select the manual mode of test mode (see page 13), and set the laser power adjusting mode (item number 010).

This set LCD display

2. Press the [⏮] key continuously until the optical pick-up moves to the most inward track.
3. Open the cover and set the laser power meter on the objective lens of the optical pick-up.
4. Press the [►] key, and set the laser MO read adjustment mode (item number 011).

This set LCD display



5. Press the [ENTER] key and set the address & adjusted value display (See page 14).

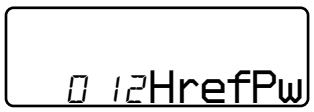
This set LCD display

###: Address*
**: Adjusted value*

6. Check that the laser power meter reading is 0.81 ± 0.08 mW.
7. Check that the voltage both ends (TP (+) and TP (–)) of resistor R501 at this time is below 44 mV.

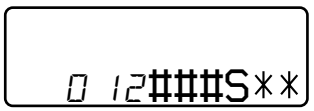
8. Press the ► key, and set the laser CD read adjustment mode (item number 012).

This set LCD display



9. Press the ENTER key and set the address & adjusted value display (see page 14).

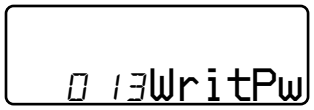
This set LCD display



###: Address
***: Adjusted value*

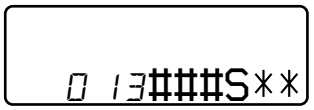
10. Check that the laser power meter reading is 0.97 ± 0.10 mW.
11. Check that the voltage both ends (TP (+) and TP (–)) of resistor R501 at this time is below 44 mV.
12. Press the ► key, and set the laser MO write adjustment mode (item number 013).

This set LCD display



13. Press the ENTER key and set the address & adjusted value display (See page 14).

This set LCD display

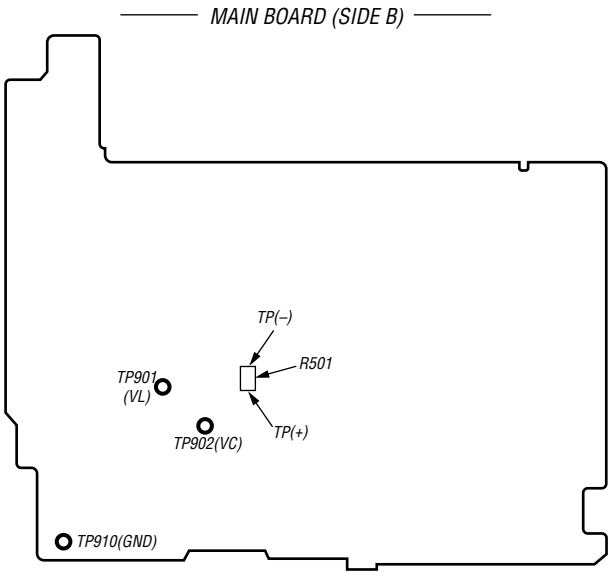


###: Address
***: Adjusted value*

14. Check that the laser power meter reading is 4.95 ± 0.50 mW.
15. Check that the voltage both ends (TP (+) and TP (–)) of resistor R501 at this time is below 80 mV.
16. Press the ■ key to quit the manual mode, and activate the test mode (display check mode).

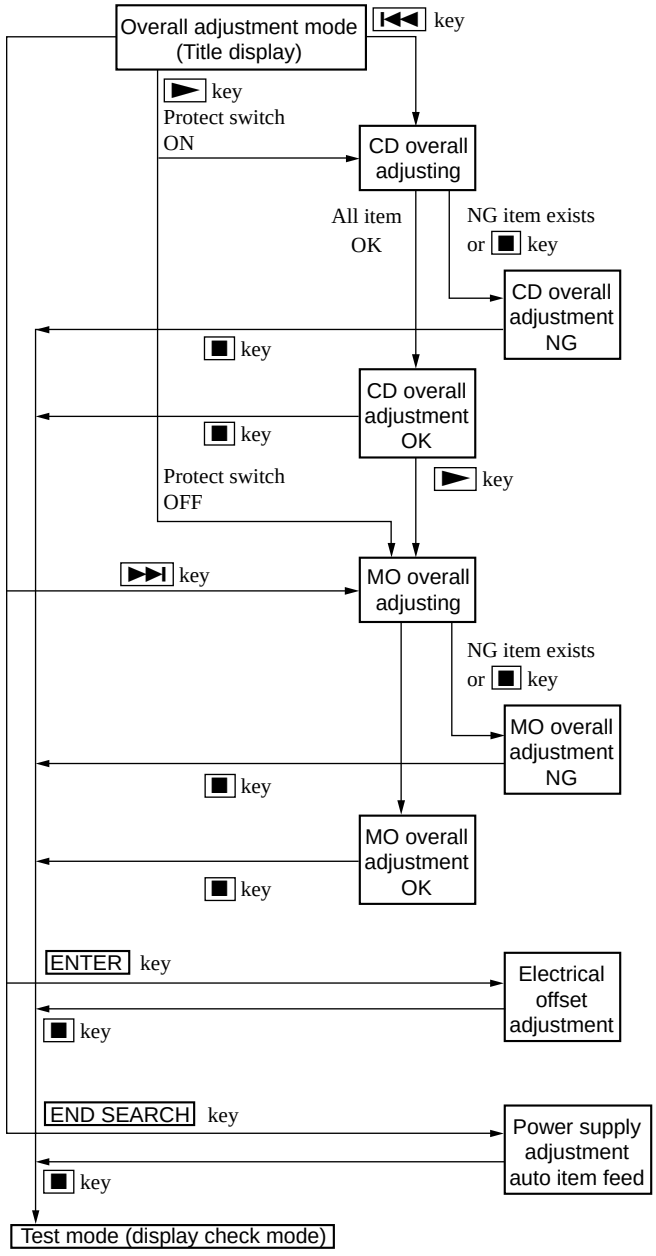
Checking and Connection Location: MAIN board

Adjustment/checking and Connection Location:



5-8. Overall Adjustment Mode

• Configuration of overall adjustment



Note: Adjust the CD first, when performing adjustment.

• **Overall Adjustment Mode (Title Display)**

This set LCD display

: (Disc mark) At end power supply adjustment:Outside lit
At end of electrical offset adj.:inside lit
Note:On the set having microcomputer version 1.000,the disc mark is displayed on the set LCD only.
*** : Left side = MO overall adjustment information*
F: MO overall adjustment completed*
1: Manual adjustment exists(overall adj.not completed)*
0: Not adjusted*
Right side = CD overall adjustment information
F: CD overall adjustment completed*
1: Manual adjustment exists(overall adj.not completed)*
0: Not adjusted*

• **Electrical Offset Adjusting Method**

Caution: The electrical offset adjustment must be made with no disc loaded.

1. Make sure that the power supply voltage is 3V.
2. Set the test mode (see page 12).
3. Press the |◄◄| or VOL– key to activate the overall adjustment mode.

This set LCD display

4. Press the ENTER key.

This set LCD display

**: Adjusted value*

5. Electrical offset adjustment is over, if the following display appears.

This set LCD display

• **Adjustment Method of Overall CD and MO Adjustment Mode**

1. Setting the test mode (see page 12).
2. Press the |◄◄| or VOL – key activates the overall adjustment mode.

This set LCD display

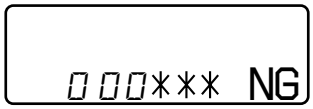
3. Insert CD disc in the set, and press the |◄◄| key to set the Overall CD Adjustment mode. Automatic adjustments are made.

This set LCD display

xxx: Item number for which on adjustment is being executed.

4. In case of CD overall adjustment NG, reset the NV (see page 18), then readjust from the temperature correction (see page 20).

This set LCD display



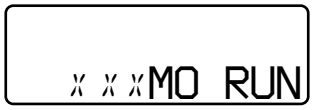
****: NG item number*

5. If OK through the overall CD adjustments, then perform overall MO adjustments.

This set LCD display

6. Insert MO disc in the set, and press the |►►| key to set the Overall MO Adjustment mode. Automatic adjustments are made.

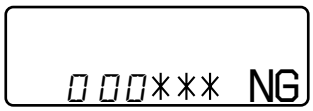
This set LCD display



xxx: Item number for which on adjustment is being executed.

7. In case of MO overall adjustment NG, reset the NV (see page 18), then readjust from the temperature correction (see page 20).

This set LCD display



****: NG item number*

8. If OK through the overall MO adjustments, press the ■ key to return to the test mode and terminate the Overall Adjustment mode.

This set LCD display

• Overall CD and MO adjustment items

1. Overall CD adjustment items

Item No.	Description
312 313 314	CD electrical offset adjustment
321	CD tracking error gain adjustment
328	CD TWPP gain adjustment
324 332	CD tracking error offset adjustment
336	CD ABCD gain adjustment
344	CD focus gain adjustment
345	CD tracking gain adjustment
521 522	CD two-axis sensitivity adjustment

2. Overall MO adjustment items

Item No.	Description
112 113 114 118	MO electrical offset adjustment
221	Low reflective CD tracking error gain adjustment
224 232	Low reflective CD tracking error offset adjustment
236	Low reflective CD ABCD level adjustment
244	Low reflective CD focus gain adjustment
245	Low reflective CD tracking gain adjustment
121	MO tracking error gain adjustment
122	MO TON offset adjustment
134	MO TWPP gain adjustment
131 132	MO double speed read TWPP offset adjustment
136	MO ABCD gain adjustment
144	MO focus gain adjustment
145	MO tracking gain adjustment
434	MO write TWPP gain adjustment
431	MO write TWPP offset adjustment
432	MO tracking error offset adjustment
436	MO write ABCD gain adjustment
445	MO write tracking gain adjustment
411	MO normal speed read TWPP offset adjustment
412	MO tracking error offset adjustment
448	20 sec full recording

5-9. Resume Clear

Perform the Resume clear when all adjustments completed.

• Resume Clear Setting Method

1. Select the manual mode of the test mode, and set item number 043 (see page 13).

This set LCD display

2. Press the [II] key.

This set LCD display

Resume clear complete

3. Press the [■] key to return to the test mode (display check mode).

5-10. Patch Data Rewriting When Nonvolatile Memory was Replaced

When the microcomputer in this set is replaced with a different version of microcomputer, it is needed to initialize the modified program data in the nonvolatile memory and write specific modified data for the new version in the memory.
If the microcomputer is replaced with a different version, the patch data should be rewritten as performed when the nonvolatile memory is replaced.
For a version where the method to write patch data is not described, the modified data should be initialized as specified below:

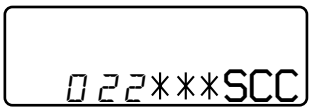
• Initial set of modified data

1. Select the manual mode of the test mode, and set item number 022 (see page 13).

This set LCD display

2. Press the [ENTER] key and set the address & adjusted value display (see page 14).

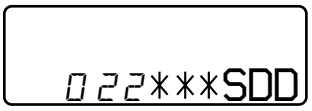
This set LCD display



CC*: Adjusted value*

3. Press the [II] key to initialize the patch data.
(The modified data writing is over, if the adjusted value changes to DD.)

This set LCD display



DD*: Adjusted value*

4. Write specific modified data.
   For a version where there is no need for writing specific modified data, the power should be turned off once.

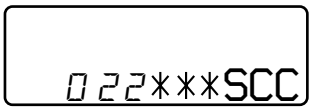
• Modified Data Writing Method (version 1.000)

1. Select the manual mode of the test mode, and set item number 022 (see page 13).

This set LCD display

2. Press the [ENTER] key and set the address & adjusted value display (see page 14).

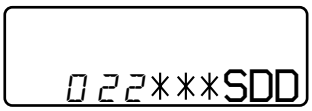
This set LCD display



CC*: Adjusted value*

3. Press the [II] key to initialize the patch data.

This set LCD display



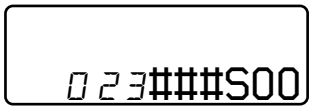
DD*: Adjusted value*

4. Select the manual mode of the test mode, and set item number 022 (see page 13).

This set LCD display

5. Press the [ENTER] key and set the address & adjusted value display (see page 14).

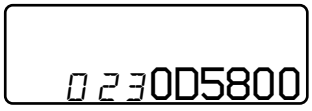
This set LCD display



###*: Address*
00*: Adjusted value*

6. Press the [VOL+] key once to change the adjusted value to 01.
7. Press the [T.MARK] + [PAUSE] keys to activate the patch data write mode.
   (The following display will appear where 00 is blinking)

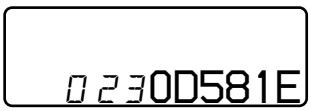
This set LCD display



00*: Adjusted value*

8. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 1E.

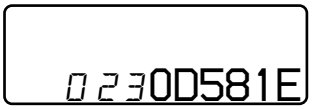
This set LCD display



1E*: Adjusted value*

9. Press the [II] key.
   (0D58 is blinking)

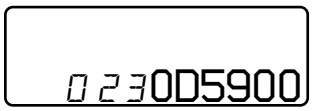
This set LCD display



1E*: Adjusted value*

10. Press the [VOL+] key once to change the blinking portion to 0D59.

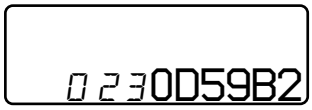
This set LCD display



00*: Adjusted value*

11. Press the [■] key.
    (00 is blinking)
12. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes B2.

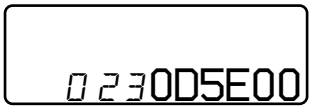
This set LCD display



B2*: Adjusted value*

13. Press the [II] key.
    (0D59 is blinking)
14. Press the [VOL+] key once to change the blinking portion to 0D5E.

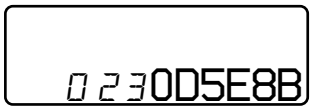
This set LCD display



00*: Adjusted value*

15. Press the [■] key.
    (00 is blinking)
16. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 8B.

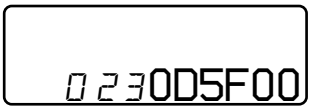
This set LCD display



8B*: Adjusted value*

17. Press the [II] key.
    (0D5E is blinking)
18. Press the [VOL+] key once to change the blinking portion to 0D5F.

This set LCD display

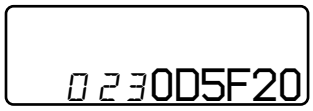


00*: Adjusted value*

19. Press the [■] key.
    (00 is blinking)

20. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 20.

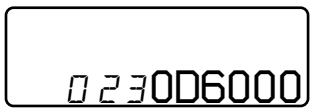
This set LCD display



20*: Adjusted value*

21. Press the [▮▮] key.
(0D5F is blinking)
22. Press the [VOL+] key once to change the blinking portion to 0D60.

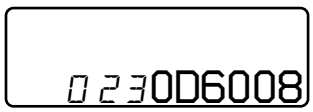
This set LCD display



00*: Adjusted value*

23. Press the [■] key.
(00 is blinking)
24. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 08.

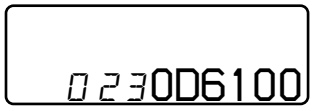
This set LCD display



08*: Adjusted value*

25. Press the [▮▮] key.
(0D60 is blinking)
26. Press the [VOL+] key once to change the blinking portion to 0D61.

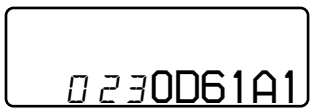
This set LCD display



00*: Adjusted value*

27. Press the [■] key.
(00 is blinking)
28. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes A1.

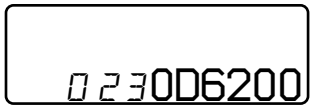
This set LCD display



A1*: Adjusted value*

29. Press the [▮▮] key.
(0D61 is blinking)
30. Press the [VOL+] key once to change the blinking portion to 0D62.

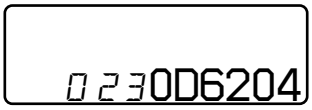
This set LCD display



00*: Adjusted value*

31. Press the [■] key.
(00 is blinking)
32. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 04.

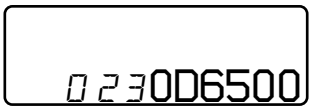
This set LCD display



04*: Adjusted value*

33. Press the [▮▮] key.
(0D62 is blinking)
34. Press the [VOL+] key once to change the blinking portion to 0D65.

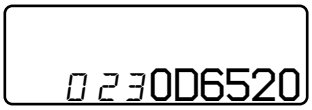
This set LCD display



00*: Adjusted value*

35. Press the [■] key.
(00 is blinking)
36. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 20.

This set LCD display



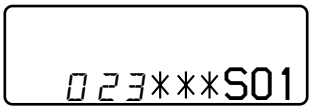
20*: Adjusted value*

37. Press the [▮▮] key.
(0D65 is blinking)
38. Press the [T.MARK] key for several seconds (about 3 seconds) to exit the patch data write mode (to return to the manual mode display in the test mode).

This set LCD display

39. Press the [ENTER] key and set the address & adjusted value display (see page 14).

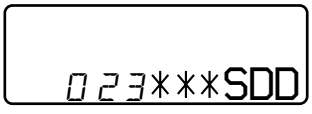
This set LCD display



01*: Adjusted value*

40. Press the [▮▮] key to write the modified data. (The adjusted value changes to CC)
41. The modified data writing is over, if the adjusted value changes to DD.

This set LCD display



DD*: Adjusted value*

42. Turn the power off.

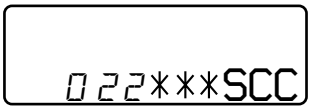
• Modified Data Writing Method (version 1.100)

1. Select the manual mode of the test mode, and set item number 022 (see page 13).

This set LCD display

2. Press the [ENTER] key and set the address & adjusted value display (see page 14).

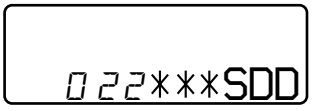
This set LCD display



CC: *Adjusted value*

3. Press the [II] key to initialize the patch data.

This set LCD display



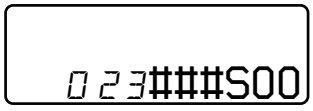
DD: *Adjusted value*

4. Select the manual mode of the test mode, and set item number 023 (see page 13).

This set LCD display

5. Press the [ENTER] key and set the address & adjusted value display (see page 14).

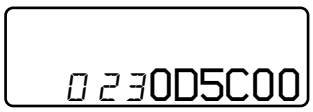
This set LCD display



####: *Address*
00: *Adjusted value*

6. Press the [VOL+] key once to change the adjusted value to 01.
7. Press the [T.MARK] + [PAUSE] keys to activate the patch data write mode.
(The following display will appear where 00 is blinking)

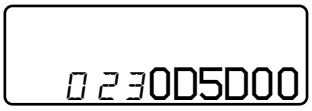
This set LCD display



00: *Adjusted value*

8. Press the [II] key.
(0D5C is blinking)
9. Press the [VOL+] key once to change the blinking portion to 0D5D.

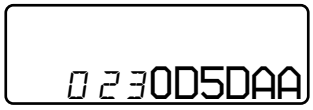
This set LCD display



00: *Adjusted value*

10. Press the [■] key.
(00 is blinking)
11. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes AA.

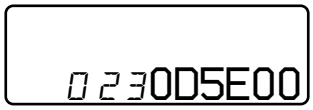
This set LCD display



AA: *Adjusted value*

12. Press the [II] key.
(0D5D is blinking)
13. Press the [VOL+] key once to change the blinking portion to 0D5E.

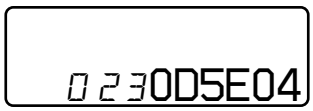
This set LCD display



00: *Adjusted value*

14. Press the [■] key.
(00 is blinking)
15. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 04.

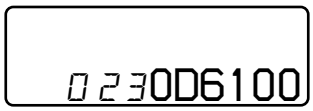
This set LCD display



04: *Adjusted value*

16. Press the [II] key.
(0D5E is blinking)
17. Press the [VOL+] key to change the blinking portion to 0D61.

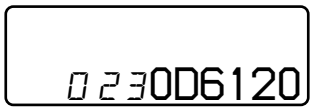
This set LCD display



00: *Adjusted value*

18. Press the [■] key.
(00 is blinking)
19. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 20.

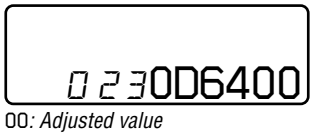
This set LCD display



20: *Adjusted value*

20. Press the [II] key.
(0D61 is blinking)
21. Press the [VOL+] key to change the blinking portion to 0D64.

This set LCD display

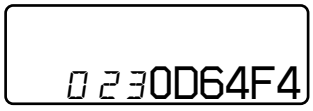


00: *Adjusted value*

22. Press the [■] key.
(00 is blinking)

23. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes F4.

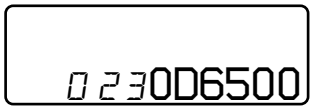
This set LCD display



F4*: Adjusted value*

24. Press the [II] key.
(0D64 is blinking)
25. Press the [VOL+] key once to change the blinking portion to 0D65.

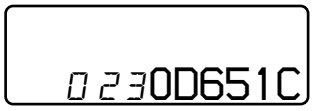
This set LCD display



00*: Adjusted value*

26. Press the [■] key.
(00 is blinking)
27. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 1C.

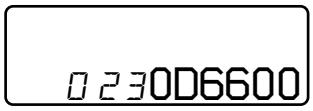
This set LCD display



1C*: Adjusted value*

28. Press the [II] key.
(0D65 is blinking)
29. Press the [VOL+] key once to change the blinking portion to 0D66.

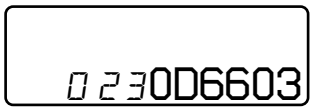
This set LCD display



00*: Adjusted value*

30. Press the [■] key.
(00 is blinking)
31. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 03.

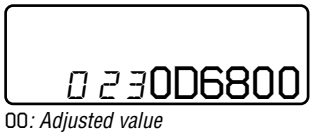
This set LCD display



03*: Adjusted value*

32. Press the [II] key.
(0D66 is blinking)
33. Press the [VOL+] key to change the blinking portion to 0D68.

This set LCD display

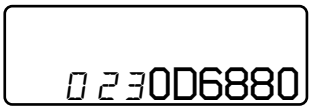


00*: Adjusted value*

34. Press the [■] key.
(00 is blinking)

35. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 80.

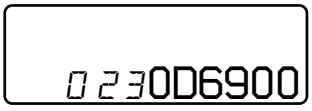
This set LCD display



80*: Adjusted value*

36. Press the [II] key.
(0D68 is blinking)
37. Press the [VOL+] key once to change the blinking portion to 0D69.

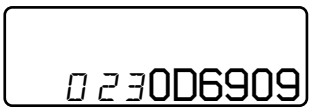
This set LCD display



00*: Adjusted value*

38. Press the [■] key.
(00 is blinking)
39. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 09.

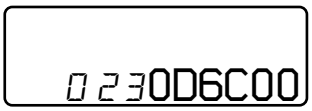
This set LCD display



09*: Adjusted value*

40. Press the [II] key.
(0D69 is blinking)
41. Press the [VOL+] key to change the blinking portion to 0D6C.

This set LCD display



00*: Adjusted value*

42. Press the [■] key.
(00 is blinking)
43. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes F6.

This set LCD display

F6*: Adjusted value*

44. Press the [II] key.
(0D6C is blinking)
45. Press the [VOL+] key once to change the blinking portion to 0D6D.

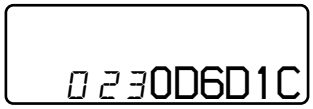
This set LCD display

00*: Adjusted value*

46. Press the [■] key.
(00 is blinking)

47. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes 1C.

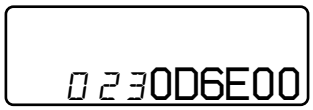
This set LCD display



1C: *Adjusted value*

48. Press the ▮▮ key.
(0D6D is blinking)
49. Press the VOL+ key once to change the blinking portion to 0D6E.

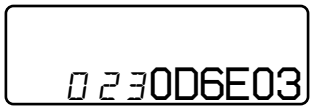
This set LCD display



00: *Adjusted value*

50. Press the ■ key.
(00 is blinking)
51. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes 03.

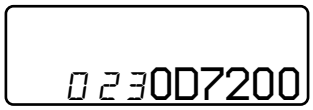
This set LCD display



03: *Adjusted value*

52. Press the ▮▮ key.
(0D6E is blinking)
53. Press the VOL+ key to change the blinking portion to 0D72.

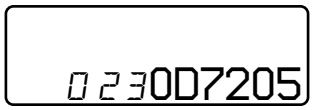
This set LCD display



00: *Adjusted value*

54. Press the ■ key.
(00 is blinking)
55. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes 05.

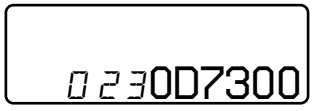
This set LCD display



05: *Adjusted value*

56. Press the ▮▮ key.
(0D72 is blinking)
57. Press the VOL+ key once to change the blinking portion to 0D73.

This set LCD display

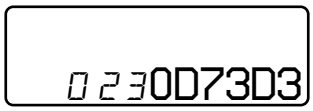


00: *Adjusted value*

58. Press the ■ key.
(00 is blinking)

59. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes D3.

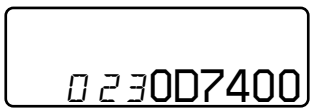
This set LCD display



D3: *Adjusted value*

60. Press the ▮▮ key.
(0D73 is blinking)
61. Press the VOL+ key once to change the blinking portion to 0D74.

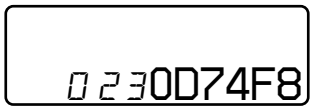
This set LCD display



00: *Adjusted value*

62. Press the ■ key.
(00 is blinking)
63. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes F8.

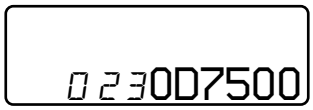
This set LCD display



F8: *Adjusted value*

64. Press the ▮▮ key.
(0D74 is blinking)
65. Press the VOL+ key once to change the blinking portion to 0D75.

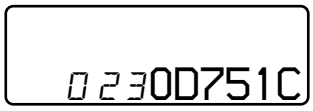
This set LCD display



00: *Adjusted value*

66. Press the ■ key.
(00 is blinking)
67. Adjust with the VOL+ key (adjusted value up) or VOL– key (adjusted value down) so that the adjusted value becomes 1C.

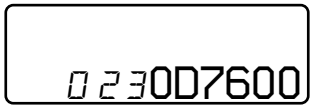
This set LCD display



1C: *Adjusted value*

68. Press the ▮▮ key.
(0D75 is blinking)
69. Press the VOL+ key once to change the blinking portion to 0D76.

This set LCD display

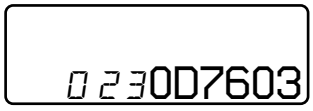


00: *Adjusted value*

70. Press the ■ key.
(00 is blinking)

71. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 03.

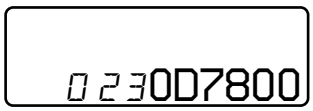
This set LCD display



03*: Adjusted value*

72. Press the [II] key.
(0D76 is blinking)
73. Press the [VOL+] key to change the blinking portion to 0D78.

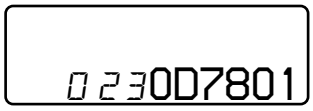
This set LCD display



00*: Adjusted value*

74. Press the [■] key.
(00 is blinking)
75. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes 01.

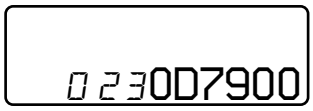
This set LCD display



01*: Adjusted value*

76. Press the [II] key.
(0D78 is blinking)
77. Press the [VOL+] key once to change the blinking portion to 0D79.

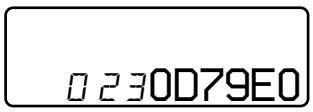
This set LCD display



00*: Adjusted value*

78. Press the [■] key.
(00 is blinking)
79. Adjust with the [VOL+] key (adjusted value up) or [VOL–] key (adjusted value down) so that the adjusted value becomes E0.

This set LCD display



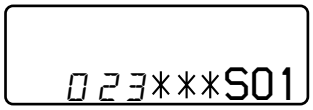
E0*: Adjusted value*

80. Press the [II] key.
(0D79 is blinking)
81. Press the [T.MARK] key for several seconds (about 3 seconds) to exit the patch data write mode (to return to the manual mode display in the test mode).

This set LCD display

82. Press the [ENTER] key and set the address & adjusted value display (see page 14).

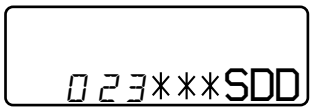
This set LCD display



01*: Adjusted value*

83. Press the [II] key to write the modified data. (The adjusted value changes to CC)
84. The modified data writing is over, if the adjusted value changes to DD.

This set LCD display



DD*: Adjusted value*

85. Turn the power off.

SECTION 6
DIAGRAMS

6-1. IC PIN FUNCTION DESCRIPTION

• IC501 SN761057DBT (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Description
1	TE	O	Tracking error signal output to the system controller (IC801)
2	REXT	—	Connect terminal to the external resistor for ADIP amp control
3	WPPLPF	—	Connect terminal to the external capacitor for TPP/WPP low-pass filter
4	VREF	O	Reference voltage output terminal (+1 V)
5	C	I	Signal (C) input from the optical pickup detector
6	D	I	Signal (D) input from the optical pickup detector
7	D-C	I	Signal (D) input from the optical pickup detector (AC input)
8	IY	I	I-V converted RF signal (IY) input from the optical pickup detector
9	IX	I	I-V converted RF signal (IX) input from the optical pickup detector
10	JX	I	I-V converted RF signal (JX) input from the optical pickup detector
11	JY	I	I-V converted RF signal (JY) input from the optical pickup detector
12	A	I	Signal (A) input from the optical pickup detector
13	A-C	I	Signal (A) input from the optical pickup detector (AC input)
14	B	I	Signal (B) input from the optical pickup detector
15	TON-C	—	Connect terminal to the external capacitor for TON hold
16	CIG	—	Connect terminal to the external capacitor for the low-pass filter of NPP divider denominator
17	CDN	—	Connect terminal to the external capacitor for the low-pass filter of CSL divider denominator
18	PD-I	I	Light amount monitor input terminal (invert input)
19	PD-NI	I	Light amount monitor input terminal (non-invert input)
20	PD-O	O	Light amount monitor output terminal
21	ADIP	O	ADIP duplex FM signal (22.05 kHz ± 1 kHz) output to the system controller (IC801)
22	DVDD	—	Power supply terminal (+2.3 V) (digital system)
23	SBUS	I/O	SSB serial data input/output with the system controller (IC801)
24	SCK	I	SSB serial clock signal input from the system controller (IC801)
25	XRST	I	Reset signal input from the system controller (IC801) “L”: reset
26	OFTRK	I	Off track signal input from the system controller (IC801)
27	DGND	—	Ground terminal (digital system)
28	BOTM	O	Bottom hold signal output of the light amount signal (RF/ABCD) to the system controller (IC801)
29	PEAK	O	Peak hold signal output of the light amount signal (RF/ABCD) to the system controller (IC801)
30	VREF075	—	Connect terminal to the external capacitor for the internal reference voltage
31	VC	O	Middle point voltage (+1.2 V) generation output terminal
32	CCSL2	—	Connect terminal to the external capacitor for TPP/WPP low-pass filter
33	RF OUT	O	Playback EFM RF signal output to the system controller (IC801)
34	AGND	—	Ground terminal (analog system)
35 – 37	EQ, LP, PS	—	Connect terminal to the external capacitor for the RF equalizer
38	AVCC	—	Power supply terminal (analog system) (+2.3 V)
39, 40	OFC-2, OFC-1	—	Connect terminal to the external capacitor for RF AC coupling
41	ABCD	O	Light amount signal (ABCD) output to the system controller (IC801)
42	FE	O	Focus error signal output to the system controller (IC801)
43	S-MON	O	Servo signal monitor output to the system controller (IC801)
44	ADIP-IN	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input terminal

• IC801 CXD2671-204GA (SYSTEM CONTROLLER, DIGITAL SIGNAL PROCESSOR, 16M BIT D-RAM)

Pin No.	Pin Name	I/O	Description
1	PAUSE KEY	I	Set key input terminal (❚❚ key input)
2	(MIC SENSE)	O	Control signal output to the microphone amp "H": HIGH, "L": LOW, normally: "H" Not used (open)
3	XTEST	I	Input terminal for the test mode set up "L": test mode (normally fixed at "H")
4, 5	NC	O	Not used (open)
6	MCUVDD0	—	Power supply terminal (for microcomputer block) (+1.5 V)
7	MIFVSS3	—	Ground terminal (for microcomputer I/F)
8	XRST	I	System reset signal input terminal from the power control (IC901) "L": reset
9	S MON	I	Servo signal monitor input terminal (A/D input) from RF amp (IC501)
10	VB MON	I	Voltage monitor input terminal of UNREG power supply (A/D input)
11	CHG MON	I	Charge voltage monitor input terminal (A/D input) Not used (open)
12	VREF MON	I	Clear reference voltage input terminal (A/D input) from RF amp (IC501)
13, 14	SET KEY 1, SET KEY 2	I	Set key input terminal (A/D input)
15	VL MON	I	VL voltage monitor input terminal (A/D input)
16	HIDC MON	I	HIGH DC voltage monitor input terminal (A/D input)
17	WK DET	I	Set key start switching detection signal input terminal (A/D input)
18	REC KEY	I	REC key input terminal (A/D input)
19	HALF LOCK SW	I	Open button detection switch (S805) input terminal (A/D input) "L": when normal position, "H": when locked
20	RMC KEY	I	Key input terminal (A/D input) of the remote commander attached headphone
21	AVDD	—	Power supply terminal (for the analog circuit block) (+2.8 V)
22	AVSS	—	Ground terminal (for the analog circuit block)
23	VDIOSC	—	Power supply terminal (for OSC cell) (+2.4 V)
24	OSCI	I	System clock (45.1584 MHz) input terminal
25	OSCO	O	System clock (45.1584 MHz) output terminal
26	VSIOSC	—	Ground terminal (for OSC cell)
27	DAVDD	—	Power supply terminal (for the built-in D/A converter) (+2.4 V)
28	VREFL	I	Reference voltage input terminal (for the internal D/A converter L-CH)
29	AOUTL	O	Built-in D/A converter (L-CH) output terminal
30	AOUTR	O	Built-in D/A converter (R-CH) output terminal
31	VREFR	I	Reference voltage input terminal (for the built-in D/A converter R-CH)
32	DAVSS	—	Ground terminal (for the built-in D/A converter)
33	ASYO	O	Playback EFM duplex signal output terminal
34	ASYI	I	Playback EFM comparison slice level input terminal
35	AVD1	—	Ground terminal (for the analog) (+2.4 V)
36	BIAS	I	Bias input for the playback EFM comparison
37	RFI	I	Playback EFM RF signal input from RF amp (IC501)
38	AVS1	—	Ground terminal (for the analog)
39	PCO	O	Phase comparison output for the master clock of playback EFM system master PLL
40	PDO	O	Phase comparison output for the analog PLL Not used (open)
41	FILI	I	Filter input for the master clock of the playback EFM system master PLL
42	FILO	O	Filter output for the master clock of the playback EFM system master PLL
43	CLTV	I	Internal VCO control voltage input for the playback EFM system master PLL
44	PEAK	I	Peak hold signal input of the light amount signal (RF/ABCD) from RF amp (IC501)
45	BOTM	I	Bottom hold signal input of the light amount signal (RF/ABCD) from RF amp (IC501)
46	ABCD	I	Light amount signal (ABCD) input from RF amp (IC501)
47	FE	I	Focus error signal input from RF amp (IC501)
48	AUX1	I	Support signal (I^3 signal/temperature signal) input terminal (A/D input)
49	VC	I	Middle point voltage (+1.2 V) input terminal
50	ADIO	O	Monitor output of A/D converter input signal Not used (open)
51	ADRT	I	A/D converter the upper limit voltage input (fixed at "H" in this set)

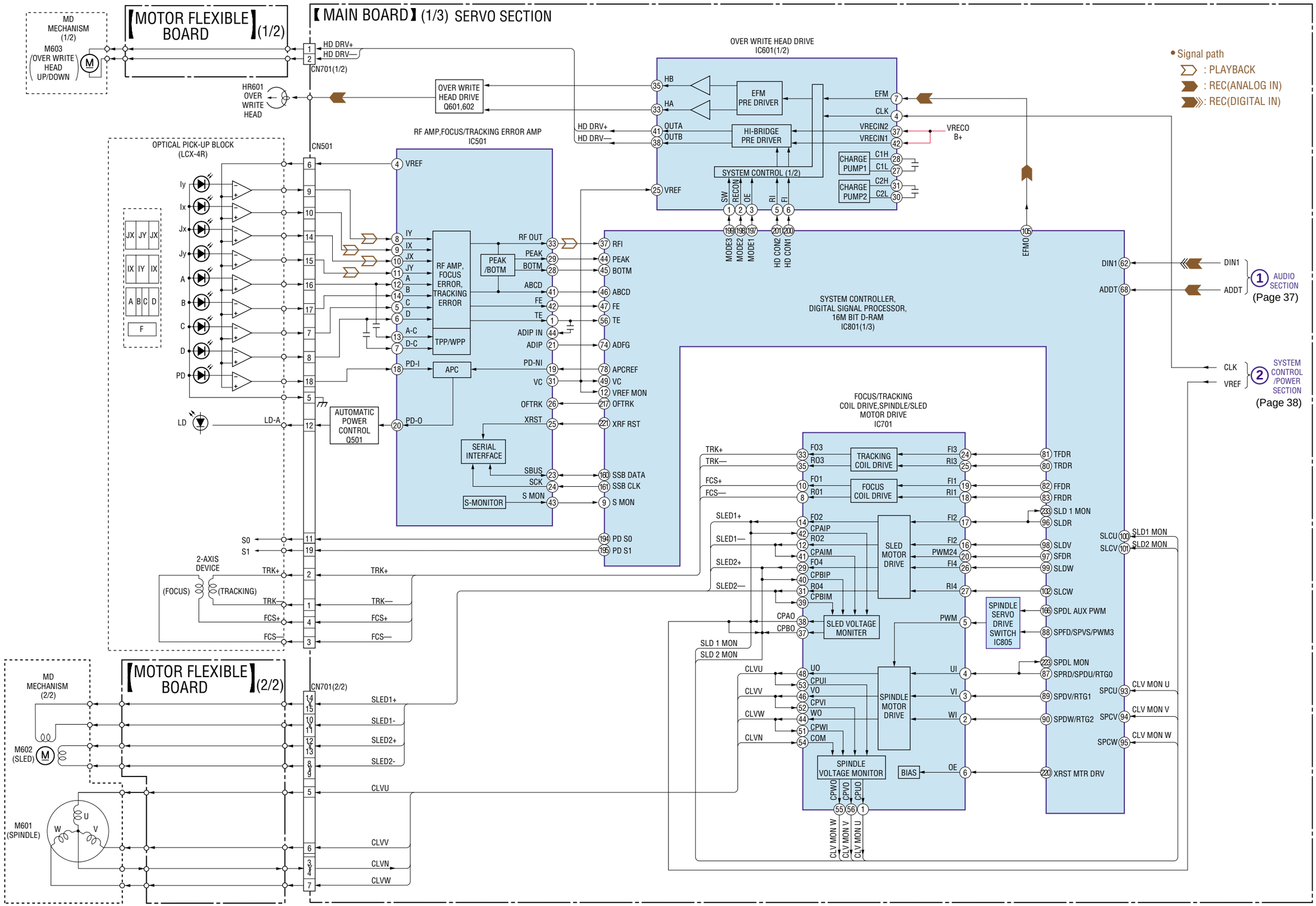
Pin No.	Pin Name	I/O	Description
52	AVD2	—	Power supply terminal (for the analog) (+2.4 V)
53	AVS2	—	Ground terminal (for the analog)
54	ADRB	I	A/D converter the lower limit voltage input (fixed at “L” in this set)
55	SE	I	Sled error signal input terminal Not used (fixed at “L”)
56	TE	I	Tracking error signal input from RF amp (IC501)
57	DCHG	—	Connecting analog power supply of the low impedance (fixed at “H” in this set)
58	APC	I	Error signal input for the laser automatic power control Not used (fixed at “H”)
59	DSPVDD0	—	Power supply terminal (for DSP block) (+1.5 V)
60	DSPVSS0	—	Ground terminal (for DSP block)
61	XTSL	I	Input terminal for the frequency set up of the system clock “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “L” in this set)
62	DIN1	I	Input terminal of the record system digital audio signal
63	(DOUT)	O	Output terminal of the playback system digital audio signal Not used (open)
64	(DAPWMLP)	O	D/A converter PWM output (L-CH right phase) Not used (open)
65	(DAPWMLN)	O	D/A converter PWM output (L-CH reverse phase) Not used (open)
66	(DAPWMRP)	O	D/A converter PWM output (R-CH right phase) Not used (open)
67	DADT	O	Audio data output Not used (open)
68	ADDT	I	Data signal input from the external A/D converter (IC301)
69	LRCK	O	L/R sampling block signal (44.1 kHz) output to the external A/D converter (IC301)
70	XBCK	O	Bit clock signal (2.8224 MHz) output to the external A/D converter (IC301)
71	FS256	O	11.2896 MHz clock signal output to the external A/D converter (IC301)
72	(MVCI)	I	Vibrate input for the digital in PLL from the external VCO Not used (fixed at “L”)
73	DSPVDD1	—	Power supply terminal (for DSP block) (+1.5 V)
74	ADFG	I	ADIP duplex FM signal (20.05 ± 1 kHz) input from RF amp (IC501)
75	(F0CNT)	O	Filter cut off control signal output Not used (open)
76	DIFVDD0	—	Power supply terminal (for DSP I/F) (+2.3 V)
77	DIFVSS0	—	Ground terminal (for DSP I/F)
78	APCREF	O	Control signal output to the reference voltage generation circuit for the laser automatic power control
79	(LDDR)	O	PWM signal output for the laser automatic power control Not used (open)
80	TRDR	O	Tracking servo drive PWM signal output (–) to the motor driver (IC701)
81	TFDR	O	Tracking servo drive PWM signal output (+) to the motor driver (IC701)
82	FFDR	O	Focus servo drive PWM signal output (+) to the motor driver (IC701)
83	FRDR	O	Focus servo drive PWM signal output (–) to the motor driver (IC701)
84	MCUVDD1	—	Power supply terminal (for the microcomputer block) (+1.5 V)
85	(FGIN)	I	FG signal input terminal for the spindle servo Not used (open)
86	FS4	O	176.4 MHz clock signal output to the power control (IC601, IC901)
87	SPRD/SPDU/RTG0	O	Spindle servo drive PWM signal output terminal (–) to the motor driver (IC701)
88	SPFD/SPVS/PWM3	O	Spindle servo drive PWM signal output (+)
89	SPDV/RTG1	O	Spindle motor drive control signal output (V)/RTG output 1 to the motor driver (IC701)
90	SPDW/RTG2	O	Spindle motor drive control signal output (W)/RTG output 2 to the motor driver (IC701)
91	DSPVDD2	—	Power supply terminal (for DSP block) (+1.5 V)
92	DSPVSS1	—	Ground terminal (for DSP block)
93	SPCU	I	Spindle motor drive comparison signal input (U) from the motor driver (IC701)
94	SPCV	I	Spindle motor drive comparison signal input (V) from the motor driver (IC701)
95	SPCW	I	Spindle motor drive comparison signal input (W) from the motor driver (IC701)
96	SRDR	O	Sled servo drive PWM signal output (–) to the motor driver (IC701)
97	SFDR	O	Sled servo drive PWM signal output (+) to the motor driver (IC701)
98	SLDV	O	Sled motor drive signal output (V) to the motor driver (IC701)/drive control signal output (1–)

Pin No.	Pin Name	I/O	Description
99	SLDW	O	Sled motor drive signal output (W) to the motor driver (IC701)/drive control signal output (2+)
100	SLCU	I	Spindle motor drive comparison signal input (U) from the motor driver (IC701)
101	SLCV	I	Spindle motor drive comparison signal input (V) from the motor driver (IC701)
102	SLCW	I	Spindle motor drive comparison signal input (W) from the motor driver (IC701)
103	DIFVDD1	—	Power supply terminal (for DSP I/F) (+2.3 V)
104	DIFVSS1	—	Ground terminal (for DSP I/F)
105	EFMO	O	EFM encode data output for the record to the over write head drive (IC601)
106	(MNT0)	O	Internal DSP monitor output (0) terminal Not used (open)
107	(MNT1)	O	Internal DSP monitor output (1) terminal Not used (open)
108	MNT2	O	Internal DSP monitor output (2) terminal Not used (open)
109	(MNT3)	O	Internal DSP monitor output (3) terminal Not used (open)
110	(SENSE)	O	Internal DSP (SENS) monitor output terminal Not used (open)
111	(TX)	O	Record data output enable signal output monitor terminal of the internal DSP Not used (open)
112	(RECP)	O	Laser power changeover signal output monitor terminal Not used (open)
113	DAPVDD3	—	Power supply terminal (for DSP block) (+1.5 V)
114 – 117	NC	O	Output terminal for the external D-RAM Not used (open)
118	DRAMVSS0	—	Ground terminal (for the external D-RAM)
119	DRAMVDD0	—	Power supply terminal (for the external D-RAM) (+2.4 V)
120 – 138	NC	O	Output terminal for the external D-RAM Not used (open)
139	DRAMVDD1	—	Power supply terminal (for the external D-RAM) (+2.4 V)
140	DRAMVSS1	—	Ground terminal (for the external D-RAM)
141	TSB MST VDD	—	Power supply terminal (for TSB master communication) (+2.8 V)
142	RMC DTCK	I/O	TSB serial data input/output with the remote commander attached headphone
143	TSB SLV VDD	—	Power supply terminal (for I/F to TSB slave communication) (+2.3 V)
144	(TSB SLVI)	I	TSB slave signal input from the remote commander attached headphone (fixed at “L”)
145	(TSB SLVO)	O	TSB slave signal output from the remote commander attached headphone Not used (open)
146	TDI	I	Data input terminal for JTAG Not used (open)
147	TMS	I	Test mode control input terminal for JTAG Not used (open)
148	TCK	I	Clock input terminal for JTAG Not used (open)
149	XTRST	I	Reset input terminal for JTAG Not used (open)
150	TDO	O	Data output terminal for JTAG Not used (open)
151	JTAGVDD	—	Power supply terminal (for JTAG) (+2.4 V)
152	JTAGVSS	—	Ground terminal (for JTAG)
153	MCUVDD2	—	Power supply terminal (for the microcomputer block) (+1.5 V)
154	MIFVDD0	—	Power supply terminal (for the microcomputer I/F block) (+2.3 V)
155	MIFVSS0	—	Ground terminal (for the microcomputer I/F block)
156, 157	TEST1, TEST0	I	Input terminal for the main test (normally fixed at “L”)
158	EVA	I	EVA/FLASH chip discrimination terminal “L”: FLASH chip, “H”: EVA chip
159	OPR LED	O	Not used (open)
160	SSB DATA	I/O	Input/output of SSB serial data with RF amp (IC501)
161	SSB CLK	O	SSB serial clock output to RF amp (IC501)
162	MCUVSS0	—	Ground terminal (for the microcomputer block)
163	(VREC PWM)	O	Over write head control spare terminal Not used (open)
164	VL PWM	O	PWM for the laser automatic power supply voltage control signal output to the power control (IC901)
165	VC PWM	O	PWM signal output for the system power supply voltage control to the power control (IC901)
166	SPDL AUX PWM	O	PWM signal output for the spindle support to the motor driver (IC701)
167	XPD ADAAUX	O	Not used (open)
168	NC	O	Not used (open)

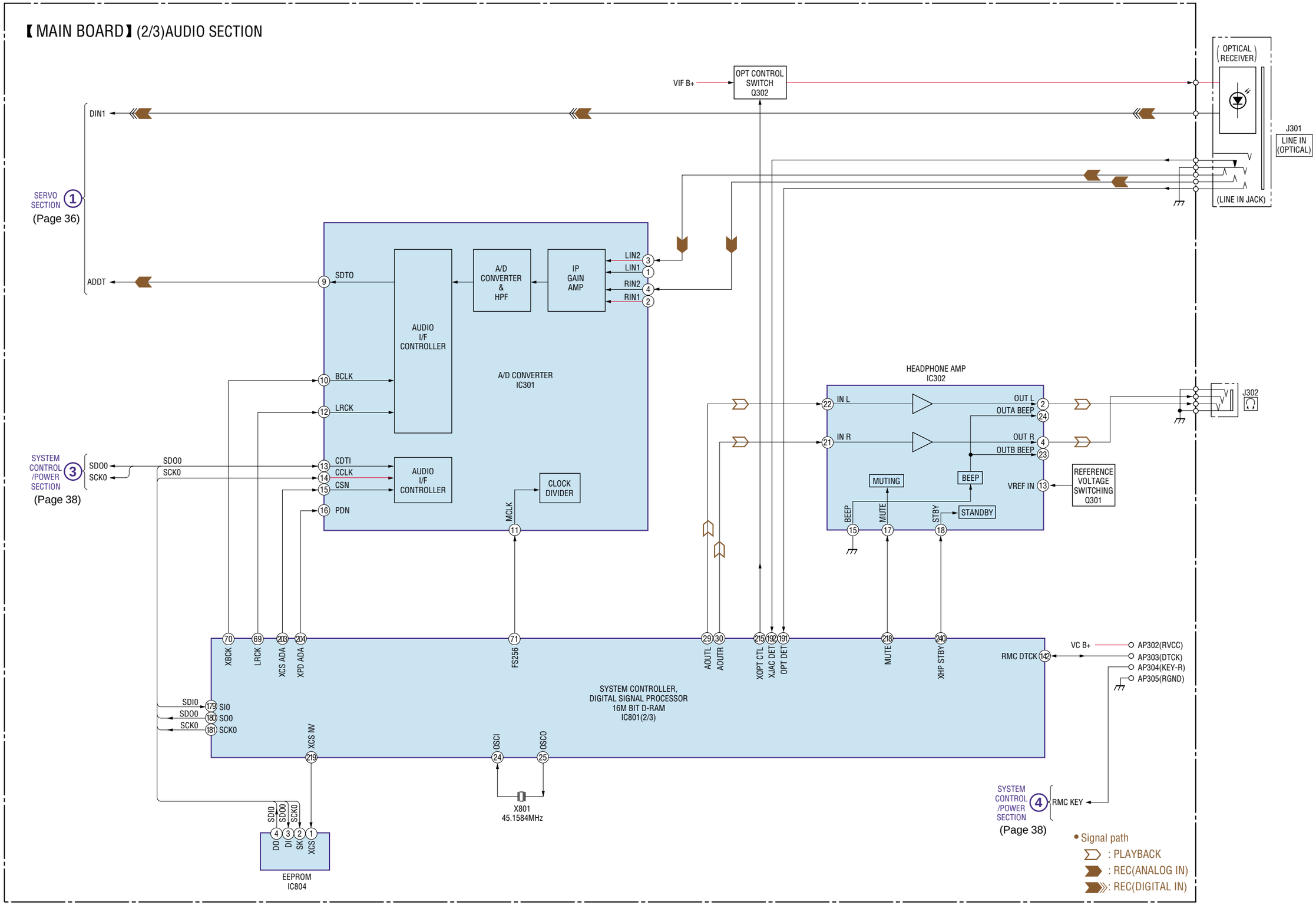
Pin No.	Pin Name	I/O	Description
169	CLK SEL	O	System clock select signal output to the power control (IC901)
170	OPEN CLOSE SW	I	Open/close detection switch (S806) of the upper panel input terminal (A/D input) “L”: when upper panel close
171	GND SW	O	Control signal output to the ground (GND) changeover switch
172	SET CODE0	O	Input terminal for the set (fixed at “L” in this set)
173, 174	SET CODE1, 2	O	Input terminal for the set (open in this set)
175	SET CODE3	O	Input terminal for the set (fixed at “L” in this set)
176	MIFVDD1	—	Power supply terminal (for the microcomputer I/F block) (+2.3 V)
177	MIFVSS1	—	Ground terminal (for the microcomputer I/F block)
178	(AOUT SEL)	O	HP/LINE changeover signal output Not used (open)
179	SI0	I	Serial data input from the nonvolatile memory (IC804) and liquid crystal display element module
180	SO0	O	Serial data output to the nonvolatile memory (IC804), A/D converter (IC301) and liquid crystal display element module
181	SCK0	O	Serial clock signal output to the nonvolatile memory (IC804), A/D converter (IC301) and liquid crystal display element module
182	(XGUM ON)	I	Battery pack detection switch input terminal for the charge “L”: there is battery pack for the charge Not used (open)
183	BEEP	O	Beep sound control signal output Not used (open)
184	NC	O	Not used (open)
185	VD SEL	O	VD power supply changeover signal output terminal Not used (open)
186	(XMUTE)	O	Analog muting control signal output terminal “L”: muting ON Not used (open)
187	LCD RST AUX	O	Reset control signal output terminal to the liquid crystal display element “L”: reset
188, 189	NC	O	Not used (open)
190	XPATCH	I	Patch function detection input terminal “L”: patch function Fixed at “L” in this set
191	OPT DET	I	DIN plug detection signal input terminal
192	XJACK DET	I	LINE IN plug detection signal input terminal
193	(XMIC DET)	I	Microphone plug detection signal input terminal Not used (open)
194, 195	PD S0, PD S1	O	PD IC mode changeover signal output to the optical pick up
196	MIFVDD2	—	Power supply terminal (for the microcomputer I/F block) (+2.3 V)
197 – 199	MODE1 – 3	O	Power supply control signal output (for the over write head drive) to the over write head drive (IC601)
200, 201	HD CON 1, 2	O	Over write head control signal output to the over write head drive (IC601)
202	REC WBL SW	O	LPF changeover switch input terminal when REC/PB control Not used (open)
203	XCS ADA	O	Chip select signal output to A/D converter (IC301)
204	XPD ADA	O	Power supply control signal output for the drive to A/D converter (IC301)
205	XCS LCD	O	Chip select signal output to the liquid crystal display element
206	LCD STB	O	Strobe signal output to the the liquid crystal display element
207	LCD RST	O	Reset control signal output to the liquid crystal display element Not used (open)
208	(REC LED)	O	LED ON/OFF control signal output for REC display Not used (open)
209	(LD ON)	O	ON/OFF control signal output terminal of the laser diode Not used (open)
210	(TSB SLV CHK)	I	TSB slave detection signal input terminal
211, 212	(K-TAI-MON), (K-TAI-SW)	I	Not used (open)
213	MCUVSS1	—	Ground terminal (for the microcomputer block)
214	CAV CLV SW	O	CAV/CLV changeover control signal output Not used (open)
215	XOPT CTL	O	Power supply ON/OFF control signal output for DIN PD drive
216	(CS RTC)	O	Chip select signal output to the clock IC Not used (open)
217	OFTRK	I	Off track signal input from RF amp (IC501)
218	MUTE	O	Analog muting control signal output “H”: muting ON
219	XCS NV	O	Chip select signal output to EEPROM (IC804)
220	XRST MTR DRV	O	Reset control signal output to the motor driver (IC701)
221	XRF RST	O	Reset control signal output to RF amp (IC501)
222	MCUVDD3	—	Power supply terminal (for the microcomputer block) (+1.5 V)

Pin No.	Pin Name	I/O	Description
223	SPDL MON	I	Spindle servo monitor signal input
224 – 226	(XAVLS), (SOUND 1, 2)	I	Not used (open)
227	XHOLD SW	I	HOLD switch (SW801) input terminal “L”: hold ON, “H”: hold OFF
228	(SYCN REC)	I	SYNCHRO REC switch input terminal “L”: OFF, “H”: ON Not used (open)
229	(SYNC LEVEL)	O	Not used (open)
230	PROTECT	I	Detection input terminal of the record check claw from the protect detection switch (S803) “L”: recording possible condition, “H”: protect
231	FLASHVDD	—	Power supply terminal (for the internal FLASH ROM) (+2.4 V)
232	FLASHVSS	—	Ground terminal (for the internal FLASH ROM)
233	SLD 1 MON	I	Sled servo monitor signal input
234	VLON	O	Power supply control signal output for the laser diode drive to the power control (IC901)
235	SLEEP	O	System sleep control signal coutput to the power control (IC901) “H”: sleep ON
236	FFCLR	O	Input latch output for the start switching to the power control (IC901)
237	(CHG GAIN)	O	Charge gain control signal output Not used (open)
238	(CHG)	O	Charge ON/OFF control signal output “H”: charge ON Not used (open)
239	(TUN REG ON)	O	Not used (open)
240	XHP STBY	O	Headphone standby signal output to the headphone amp (IC302)
241	MIFVDD3	—	Power supply terminal (for the microcomputer I/F block) (+2.3 V)
242	MIFVSS2	—	Ground terminal (for the microcomputer I/F block)
243	(TEST2)	O	Input terminal for the main test (normally open)
244	NC	—	Not used (open)

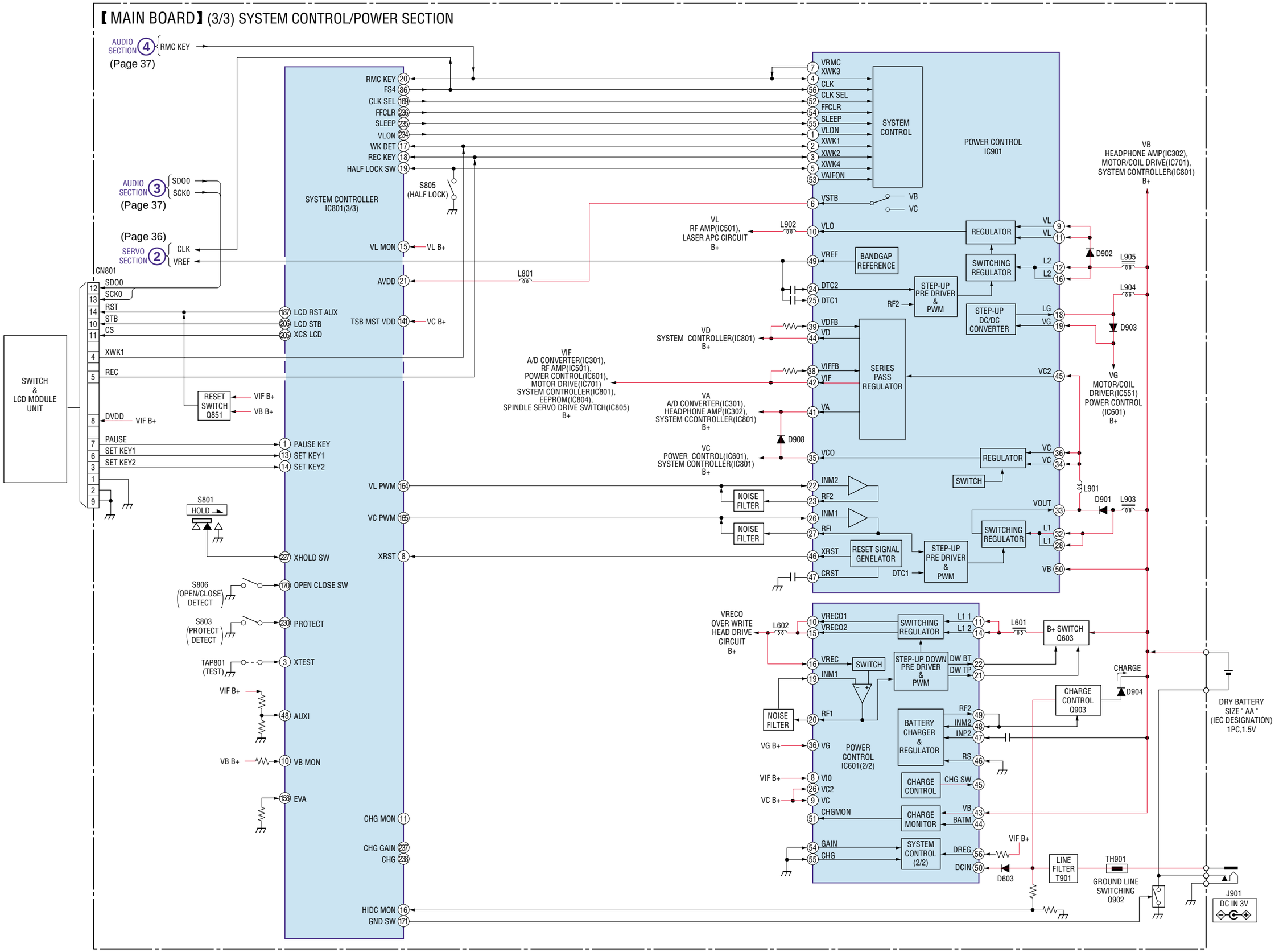
6-2. BLOCK DIAGRAM — SERVO SECTION —



6-3. BLOCK DIAGRAM — AUDIO SECTION —



6-4. BLOCK DIAGRAM — SYSTEM CONTROL / POWER SECTION —



Common note on Printed Wiring Board:

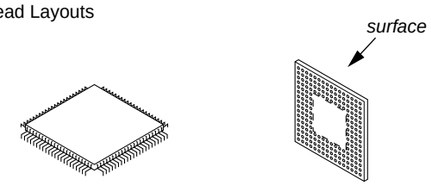
- ——— : parts extracted from the conductor side.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Main board is four-layer printed board. However, the patterns of layers 2 and 3 have not been included in this diagrams.

* Replacement of IC801 on main board requires a special tool.

- Lead Layouts



Lead layout of conventional IC　　CSP (chip size package)

Common note on Schematic Diagram:

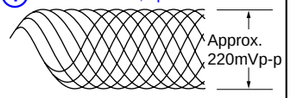
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- ▬ : B+ Line.
- Total current is measured with Minidisc installed.
- Power voltage is dc 3V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  ＊ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : PB
  : REC (ANALOG)
  : REC (DIGITAL)

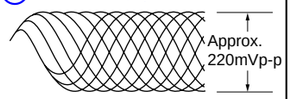
• Waveforms

① 100mV/DIV, 1µs/DIV



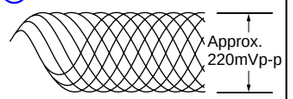
IC501 ⑧ (IY) (PB mode)

② 100V/DIV, 1µs/DIV



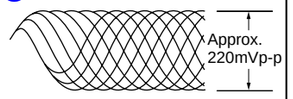
IC501 ⑨ (IX) (PB mode)

③ 100mV/DIV, 1µs/DIV



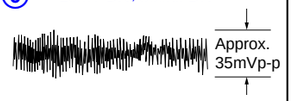
IC501 ⑩ (JX) (PB mode)

④ 100mV/DIV, 1µs/DIV



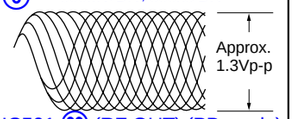
IC501 ⑪ (JY) (PB mode)

⑤ 20mV/DIV, 500ns/DIV



IC501 ① (TE) (PB mode)

⑥ 500mV/DIV, 500ns/DIV

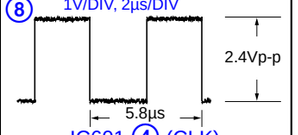


IC501 ㉝ (RF OUT) (PB mode)

⑦ 10mV/DIV, 500ns/DIV

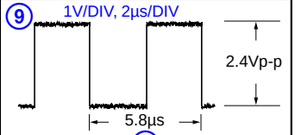
IC501 ㊷ (FE) (PB mode)

⑧ 1V/DIV, 2µs/DIV



IC601 ④ (CLK)

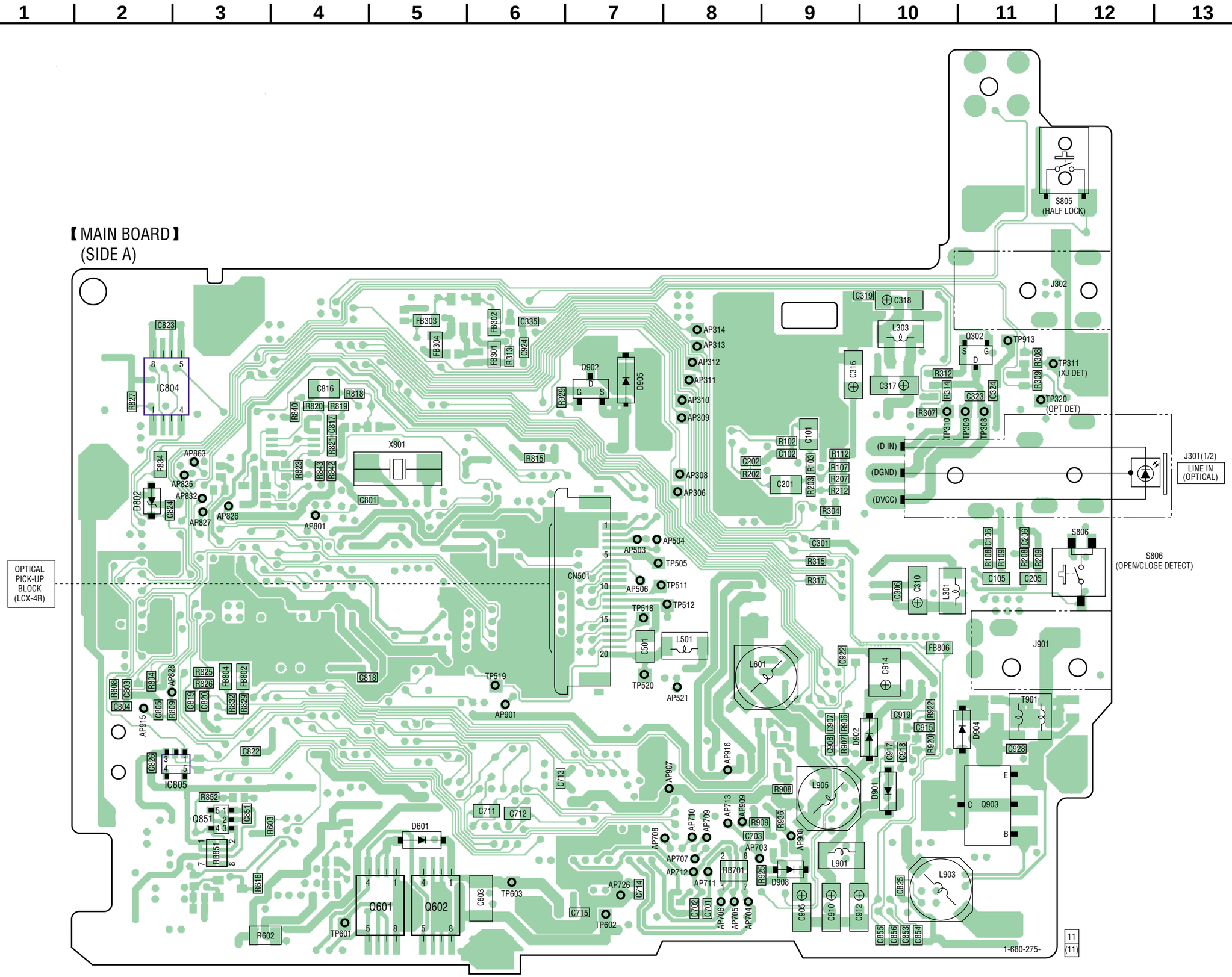
⑨ 1V/DIV, 2µs/DIV



IC901 ㊺ (CLK)

6-5. PRINTED WIRING BOARD — MAIN SECTION — • Refer to page 39 for Note.

【MAIN BOARD】
(SIDE A)

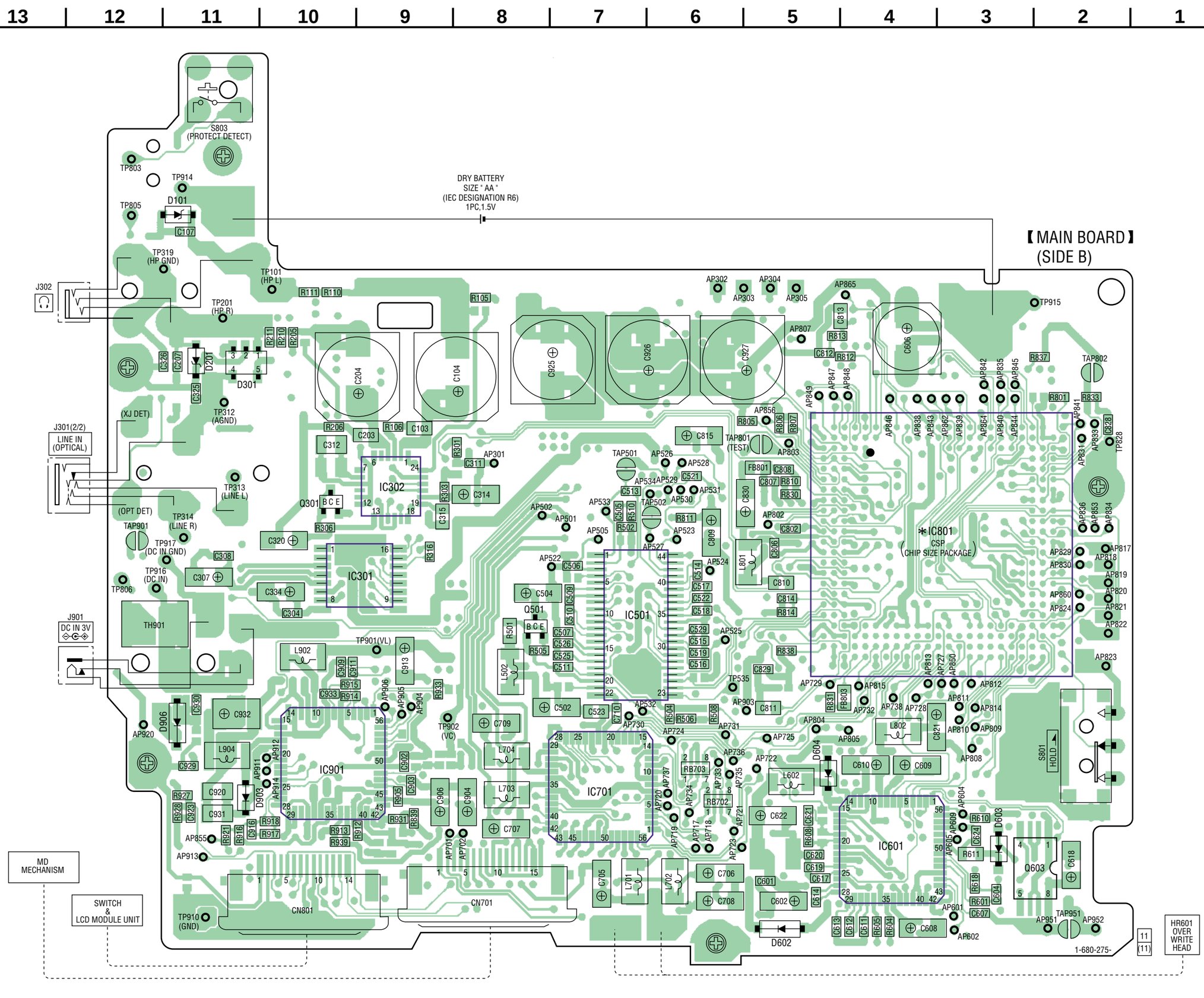


• **Semiconductor Location (SIDE A)**

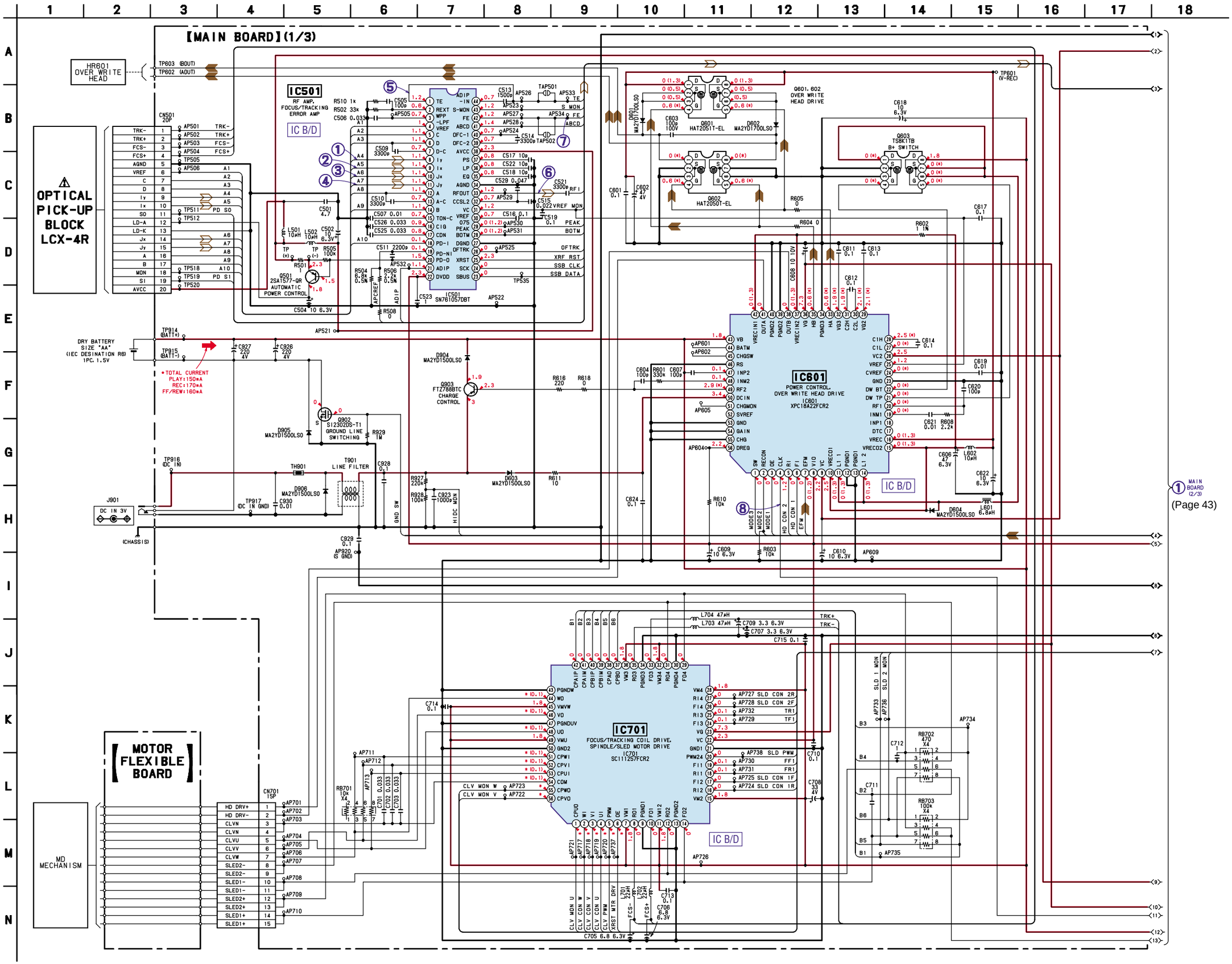
Ref. No.	Location
D601	I-5
D802	E-2
D901	H-10
D902	H-9
D904	H-11
D905	D-7
D908	I-9
IC804	D-2
IC805	H-3
Q302	D-11
Q601	I-5
Q602	I-5
Q851	I-3
Q902	D-7
Q903	H-11

• **Semiconductor Location (SIDE B)**

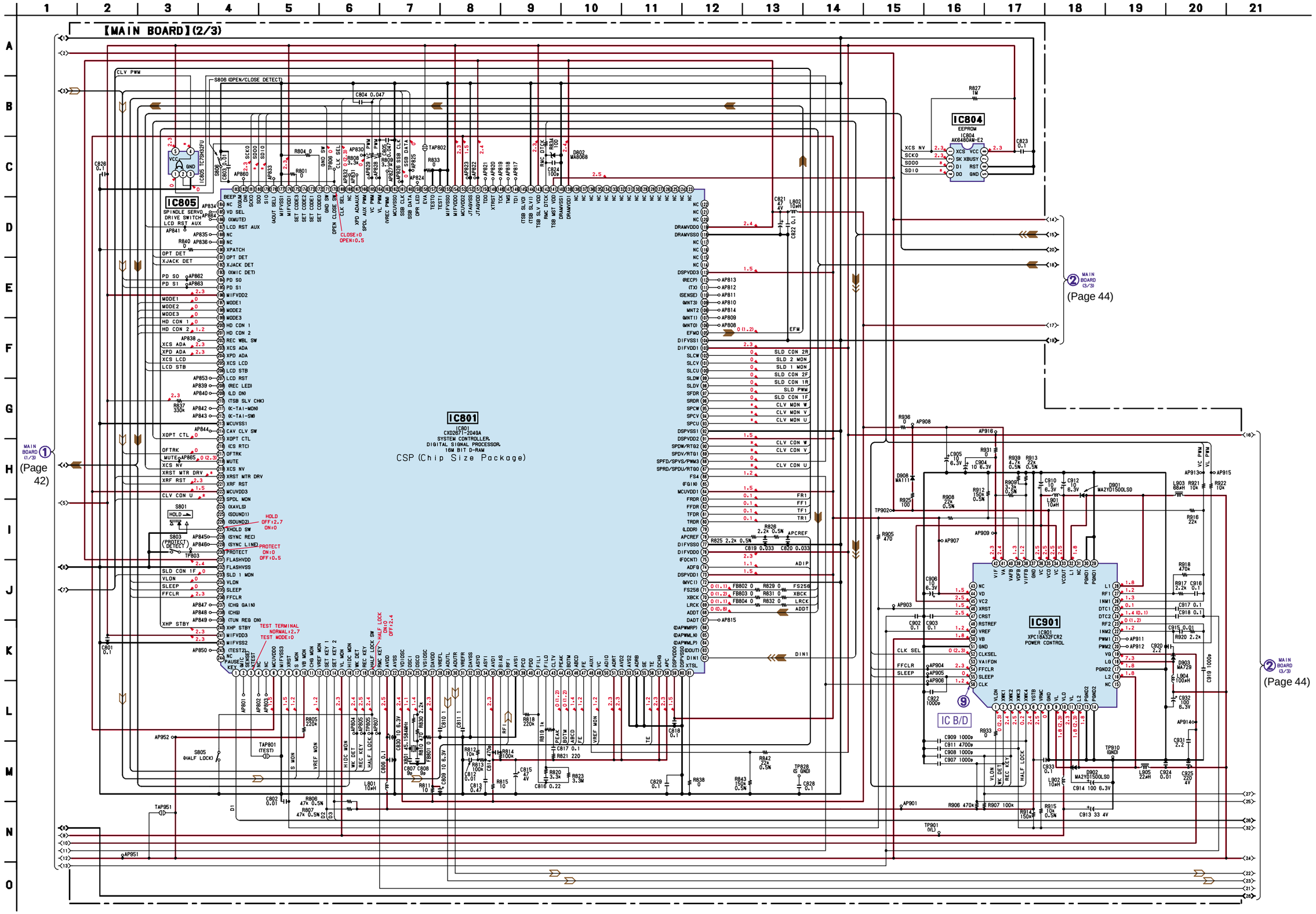
Ref. No.	Location
D101	B-11
D201	D-11
D301	D-11
D602	J-5
D603	I-3
D604	H-5
D903	H-11
D906	H-11
IC301	F-9
IC302	E-9
IC501	G-7
IC601	I-4
IC701	H-7
IC801	F-3
IC901	H-10
Q301	E-10
Q501	G-8
Q603	I-3



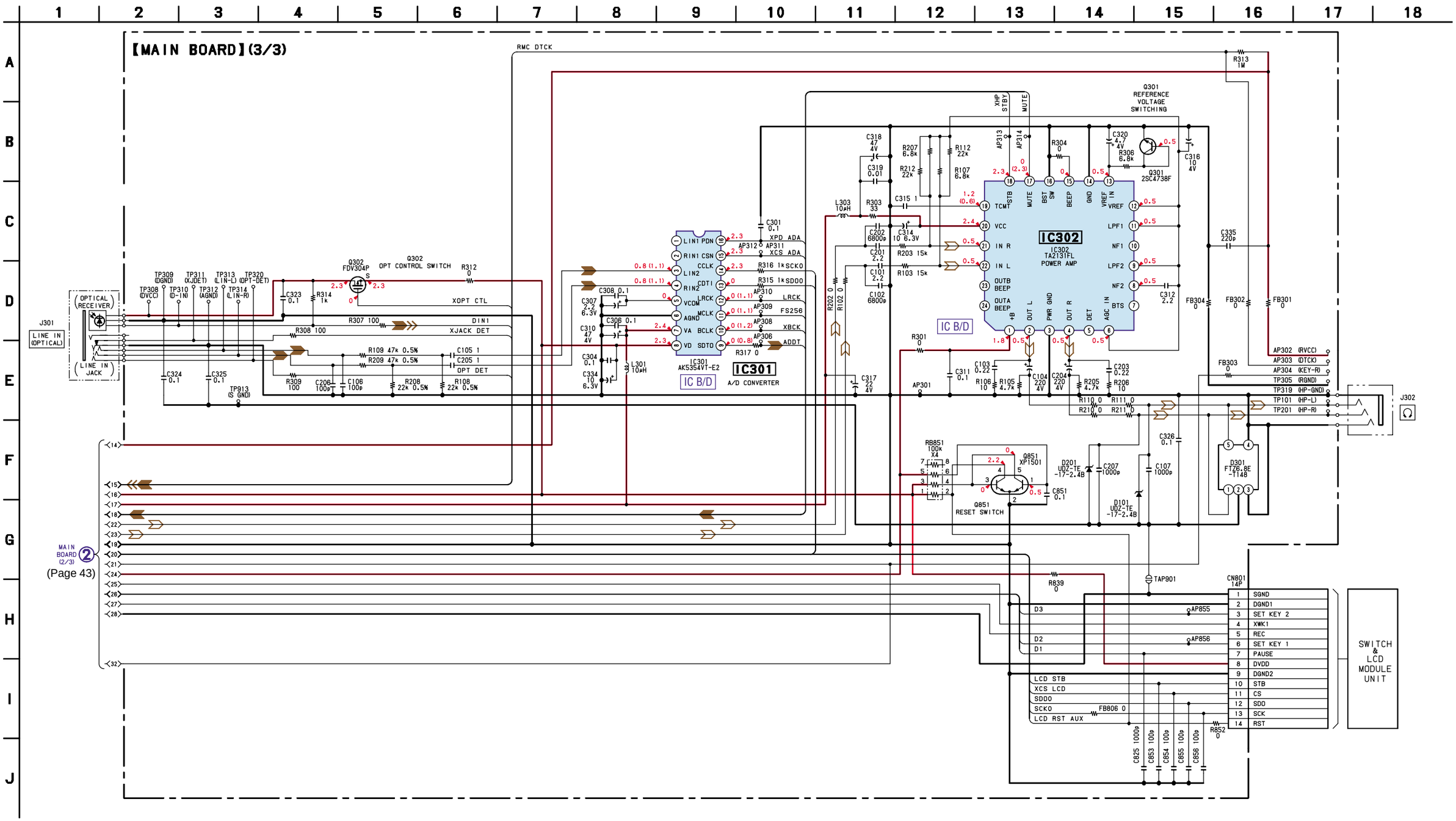
6-6. SCHEMATIC DIAGRAM — MAIN SECTION (1/3) — • Refer to page 39 for Waveforms. Refer to page 45 for IC Block Diagrams. Refer to page 39 for Note.



6-7. SCHEMATIC DIAGRAM — MAIN SECTION (2/3) — • Refer to page 39 for Waveforms. Refer to page 47 for IC Block Diagrams. Refer to page 39 for Note.

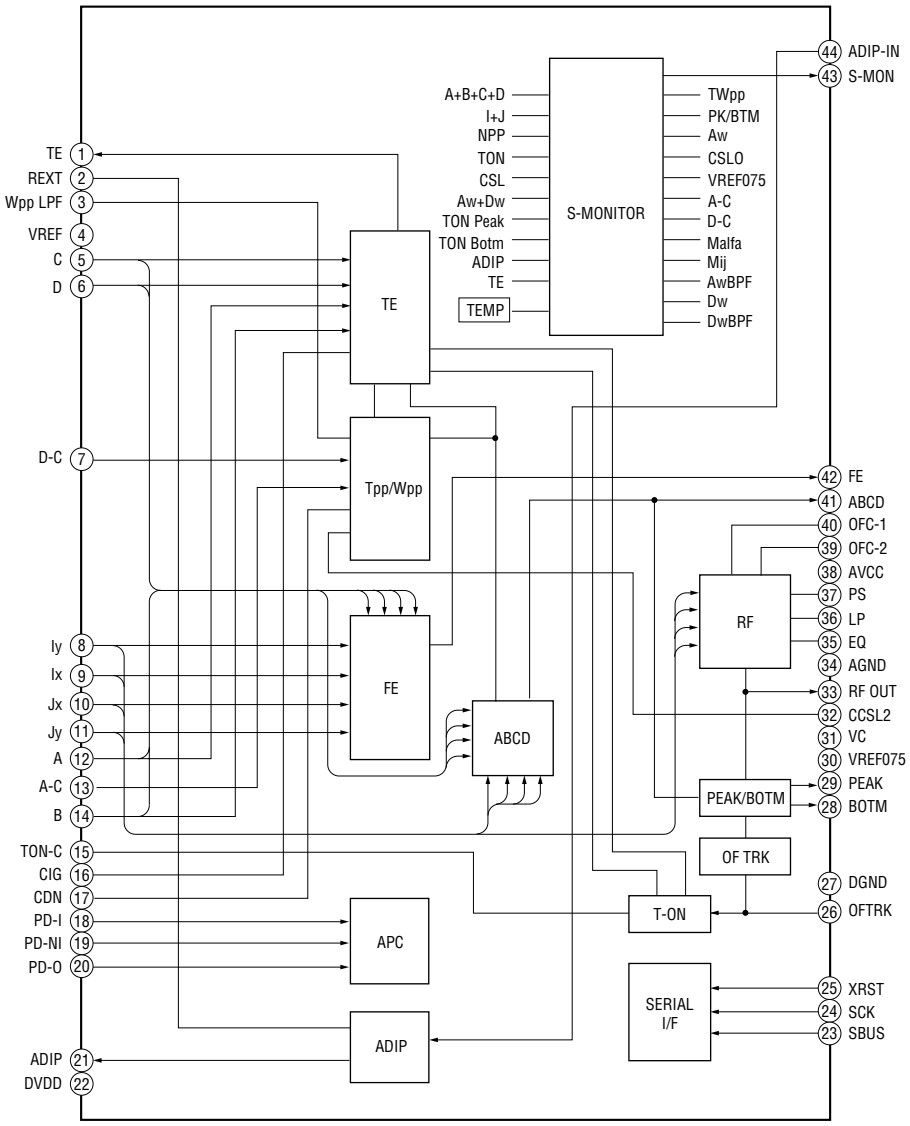


6-8. SCHEMATIC DIAGRAM — MAIN SECTION (3/3) — • Refer to page 48 for IC Block Diagrams. Refer to page 39 for Note.

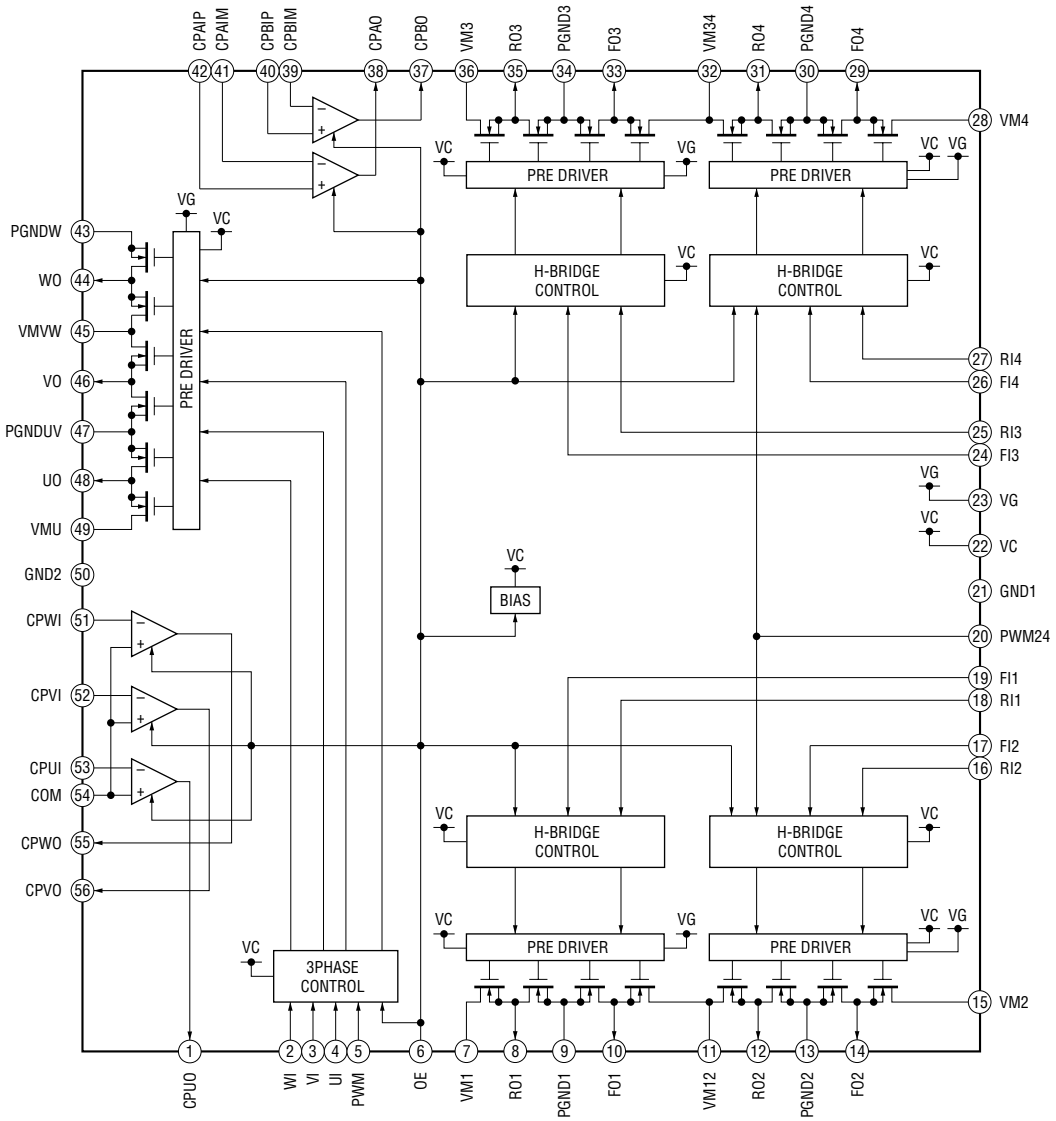


• **IC BLOCK DIAGRAMS**

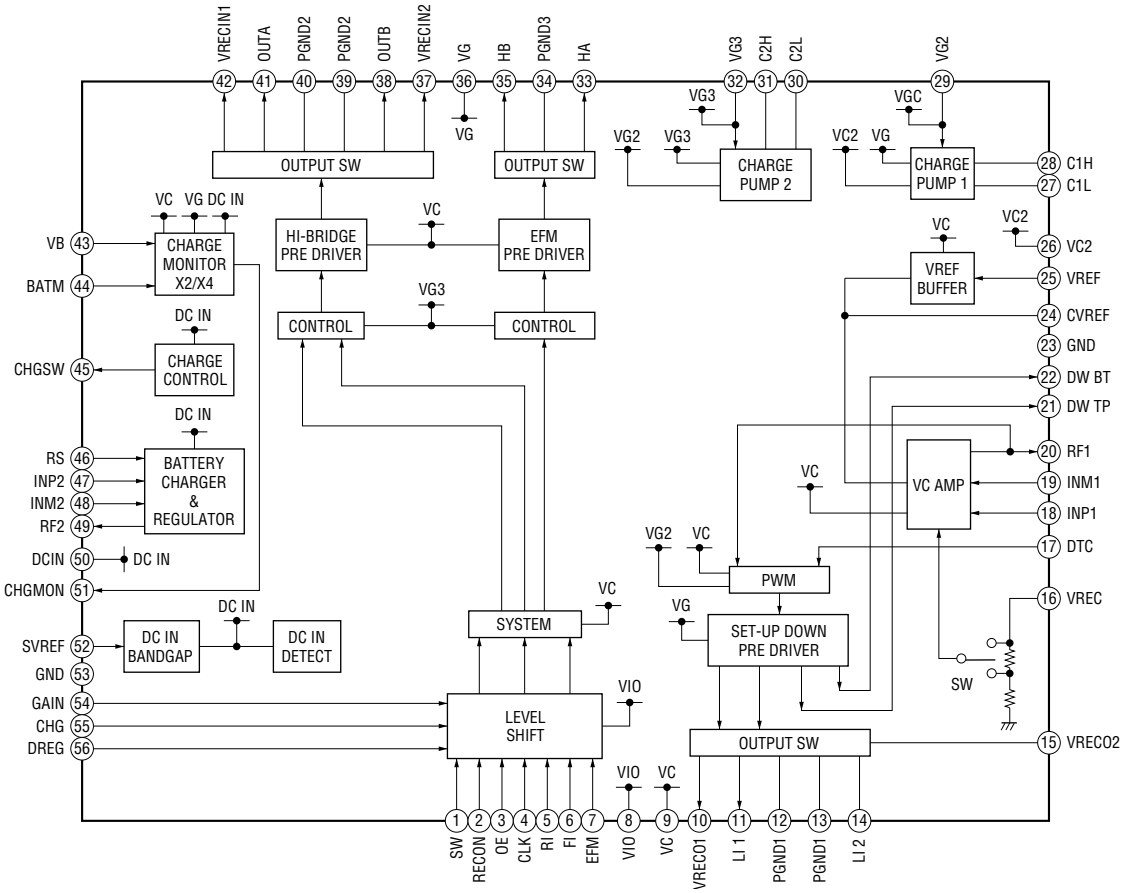
IC501 SN761057DBT



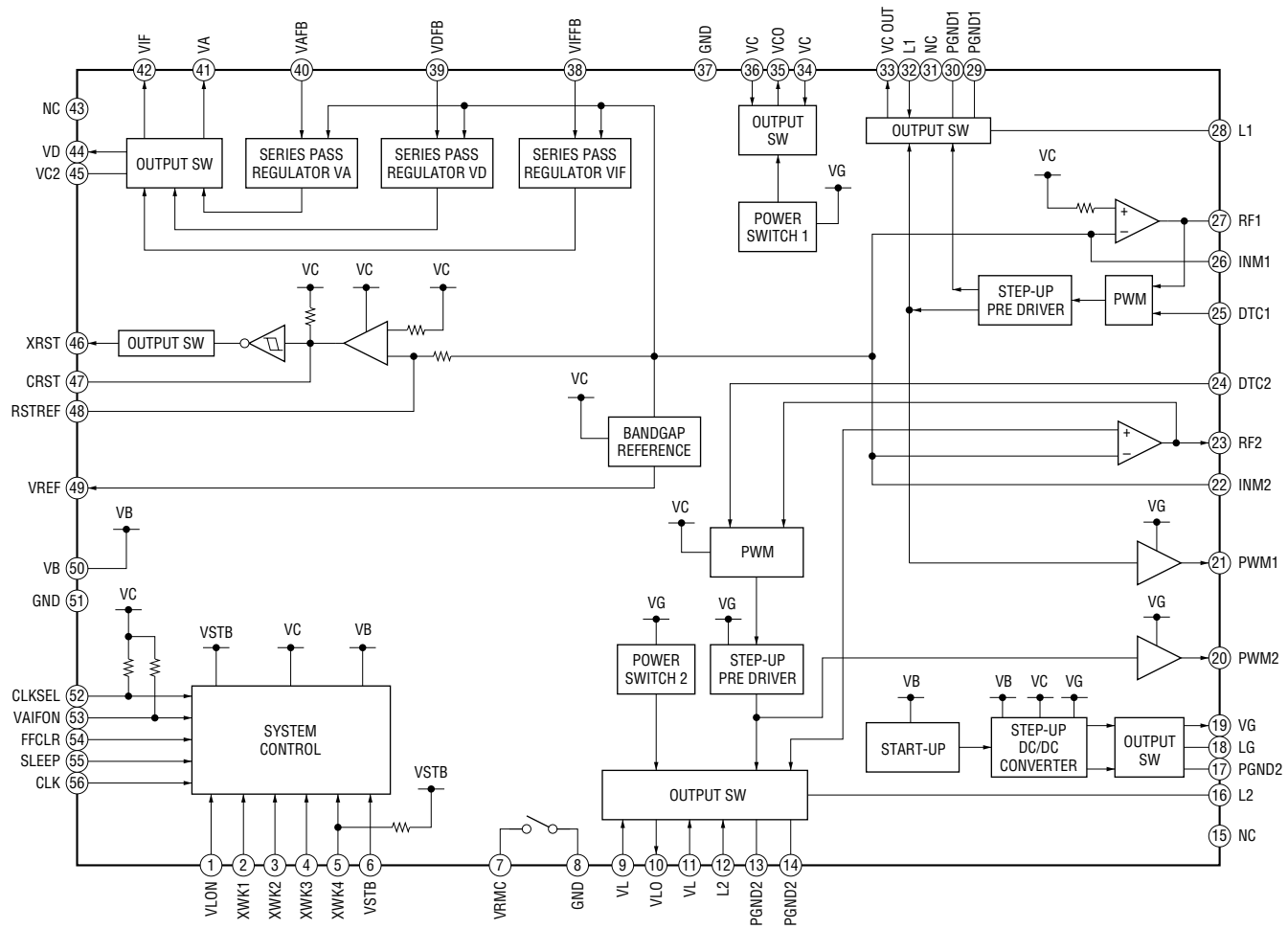
IC701 SC111257FCR2



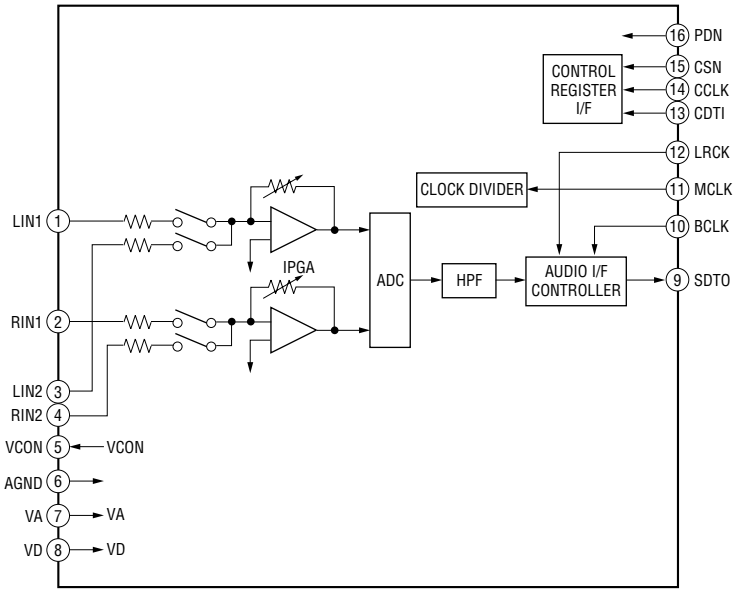
IC601 XPC18A22FCR2



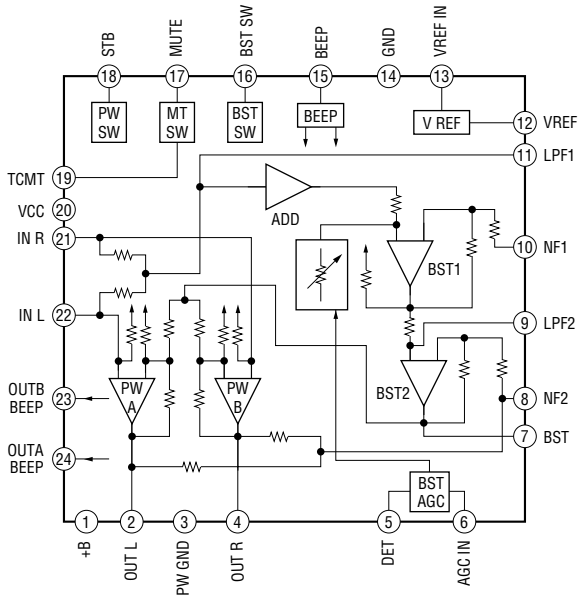
IC901 XPC18A32FCR2



IC301 AK5354VT



IC302 TA2131FL



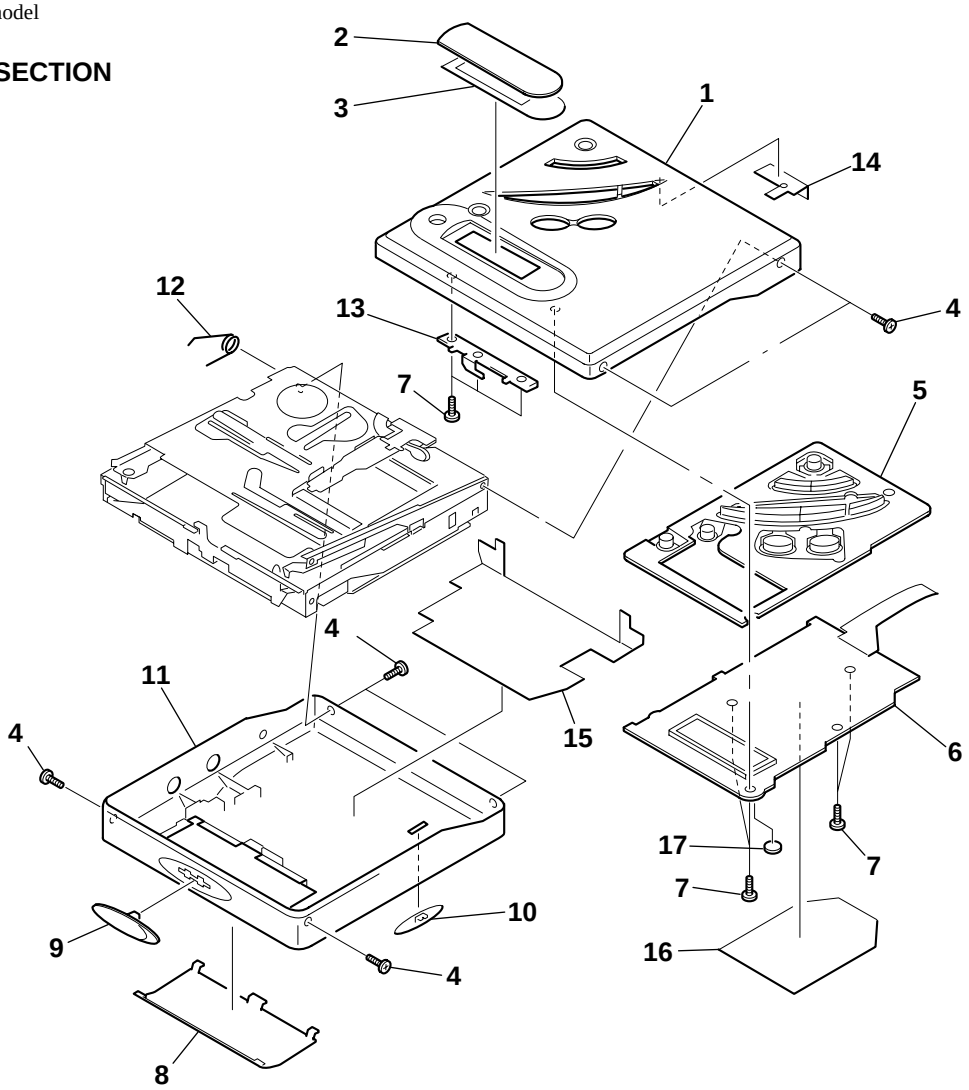
SECTION 7
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  AR : Argentine model
  CH : Chinese model
  EE : East European model
  FR : French model
  TW : Taiwan model
  JE : Tourist model
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

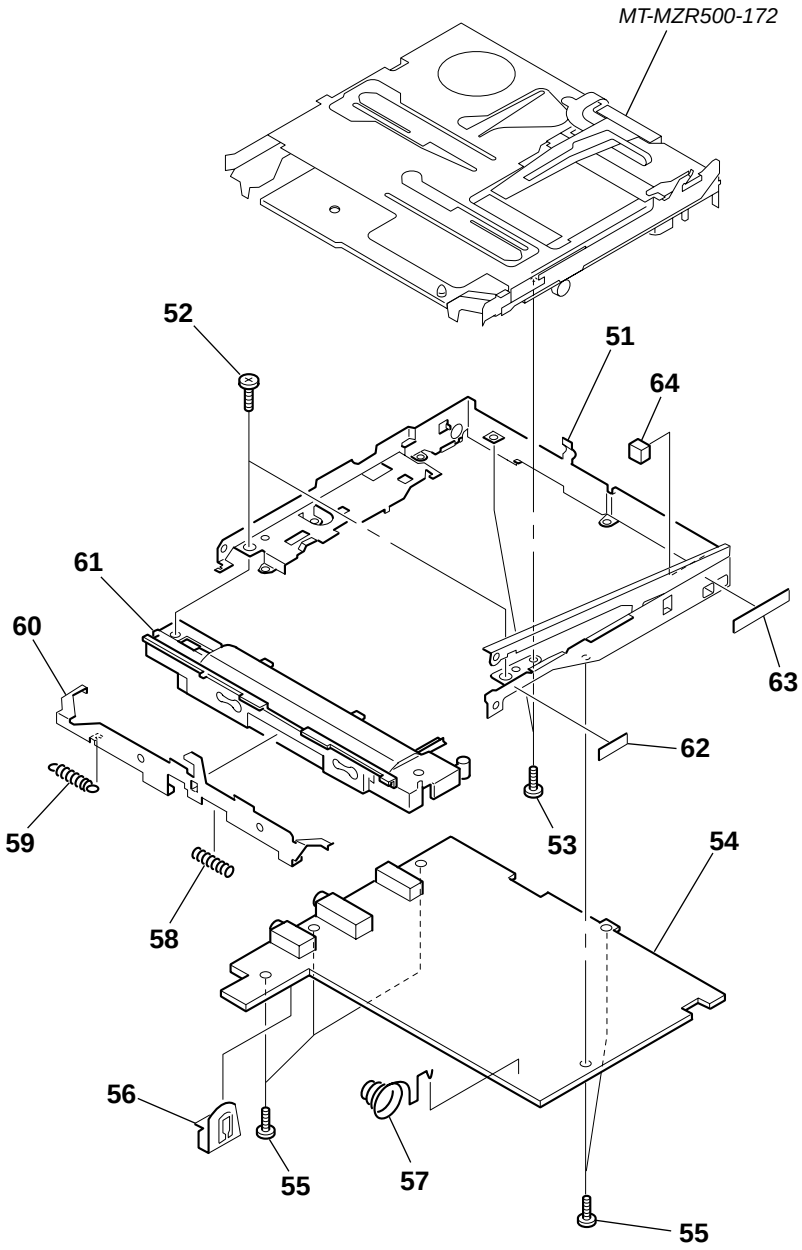
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

7-1. PANEL SECTION



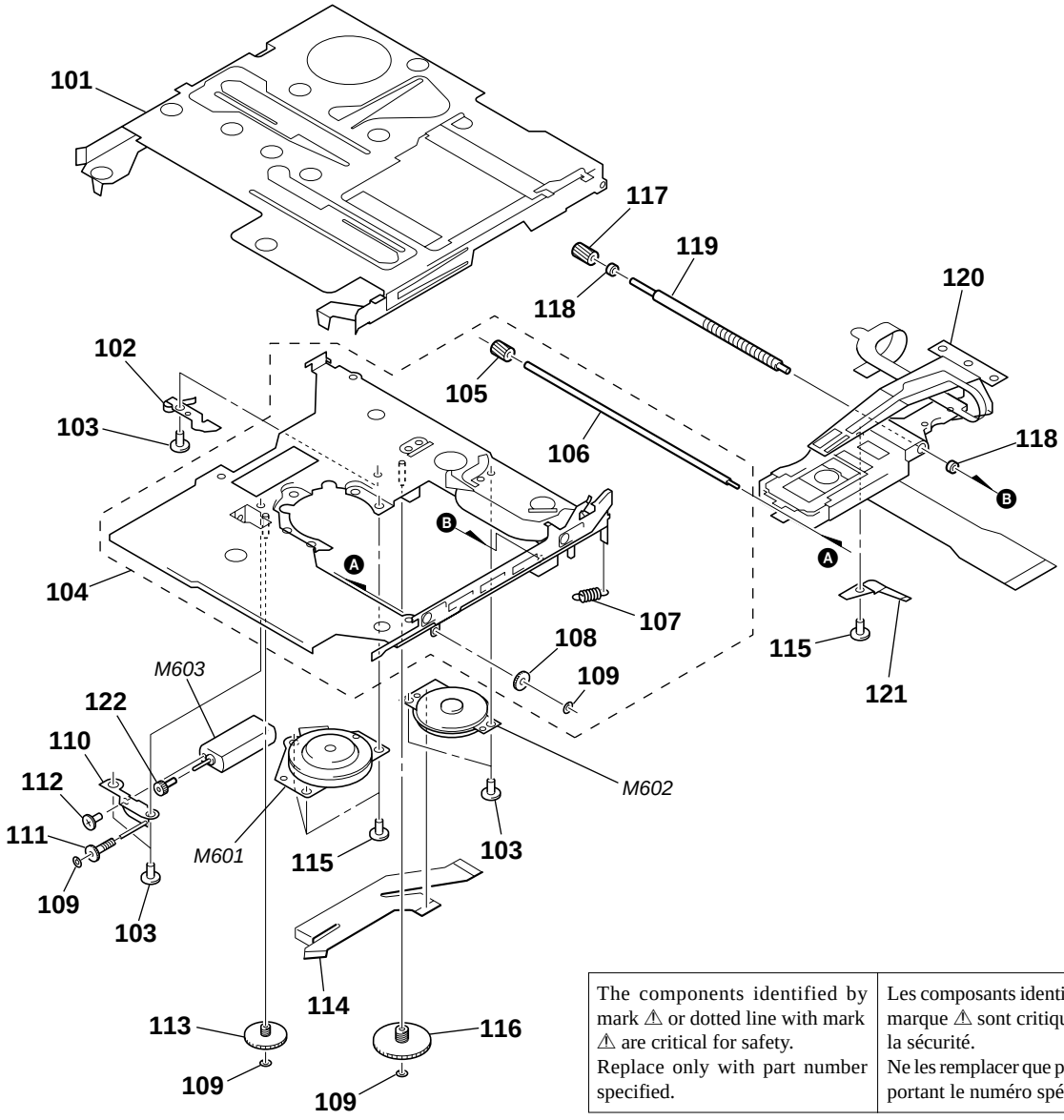
Ref. No.	Part No.	Description	Remark
1	3-225-619-01	CASE (UPPER) (SILVER)...(SILVER)	
1	3-225-619-11	CASE (UPPER) (BLUE)...(BLUE)	
1	3-225-619-21	CASE (UPPER) (BLACK)...(BLACK)	
2	3-225-622-01	WINDOW (LCD) (BLUE)...(SILVER)	
2	3-225-622-11	WINDOW (LCD) (GRAY)...(BLUE)	
2	3-225-622-21	WINDOW (LCD) (YELLOW)...(BLACK)	
3	3-225-623-01	SHEET (WINDOW), ADHESIVE	
4	4-218-233-25	SCREW (1.7), MI (SILVER)...(SILVER,BLUE)	
4	4-218-233-27	SCREW (1.7), MI (BLACK)...(BLACK)	
5	3-225-620-01	BUTTON (CONTROL)	
6	1-804-218-11	LCD MODULE	
7	3-318-382-01	SCREW (1.7X3), TAPPING	
8	3-225-636-01	LID, BATTERY CASE (BLUE)...(SILVER,BLUE)	
8	3-225-636-11	LID, BATTERY CASE (BLACK)...(BLACK)	
9	3-225-635-01	KNOB (OPEN)	
10	4-225-572-11	KNOB (HOLD)	
11	3-225-634-01	CASE (LOWER) (BLUE)...(SILVER,BLUE)	(US,CND,E,CH,TW,AR)
11	3-225-634-11	CASE (LOWER) (BLUE)...(SILVER,BLUE)	(AEP,UK,E,FR,EE)
11	3-225-634-21	CASE (LOWER) (BLACK)...(BLACK)	(US,CND,E,CH,TW,AR)
11	3-225-634-31	CASE (LOWER) (BLACK)...(BLACK)	(AEP,UK,E,FR,EE)
12	3-225-629-01	SPRING (L), TORSION	
13	3-225-621-01	LOCKER, OPEN	
14	3-228-786-01	SHEET (EARTH)	
15	3-228-930-01	PLATE (SHIELD)	
16	3-228-787-01	SHEET (CONTROL A)	
17	3-228-788-01	SHEET (CONTROL B)	

7-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
51	X-3379-969-1	CHASSIS ASSY	
52	3-318-382-01	SCREW (1.7X3), TAPPING	
53	4-218-233-11	SCREW (1.7), MI	
* 54	A-3323-653-A	MAIN BOARD, COMPLETE	
55	3-335-797-01	SCREW (M1.4X2), TOOTHED LOCK	
56	3-225-630-01	TERMINAL BOARD (+), BATTERY	
57	3-225-631-01	TERMINAL BOARD (–), BATTERY	
58	3-225-632-01	SPRING, COMPRESSION	
59	3-225-633-01	SPRING, TENSION	
60	3-225-627-01	SLIDER, OPEN	
61	3-225-626-01	CASE, BATTERY	
62	3-228-493-01	SPACER (SIDE A)	
63	3-228-494-01	SPACER (SIDE B)	
64	3-228-495-01	SPACER (REAR)	

7-3. MD MECHANISM DECK SECTION (MT-MZR500-172)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	X-3379-515-1	HOLDER ASSY	
102	3-224-779-01	SPRING, THRUST DETENT	
103	4-963-883-42	SCREW (M1.4), PRECISION PAN	
104	X-3379-514-1	CHASSIS ASSY	
105	4-222-218-01	GEAR (HD)	
106	4-222-223-01	SHAFT, SUB	
107	4-222-226-01	SPRING (EJECT), TENSION	
108	4-222-222-01	GEAR (RACK)	
109	3-338-645-41	WASHER (0.8-2.5)	
110	X-3380-408-1	CHASSIS ASSY, GEAR	
111	3-222-545-01	GEAR (HB)	
112	4-224-885-01	SCREW (M1.2X1.5)	
113	4-222-215-01	GEAR (HC)	

Ref. No.	Part No.	Description	Remark
114	1-679-762-11	MOTOR FLEXIBLE BOARD	
115	4-963-883-31	SCREW (M1.4), PRECISION PAN	
116	4-222-216-01	GEAR (SA)	
117	4-222-208-01	GEAR (SB)	
118	4-222-204-01	BEARING (N)	
119	4-222-203-01	SCREW, LEAD	
⚠120	X-3379-508-1	SERVICE ASSY, OP (LCX-4R)	
121	3-049-336-01	SPRING (S), RACK	
122	3-222-544-01	GEAR (HA)	
M601	8-835-706-01	MOTOR, DC SSM18A/C-NP (SPINDLE) (with TURNTABLE)	
M602	1-763-399-11	MOTOR, DC (SLED) (with GEAR)	
M603	1-763-400-21	MOTOR, DC (OVER WRITE HEAD UP/DOWN)	

MAIN

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- CAPACITORS
  uF : µF
- COILS
  uH : µH
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- Abbreviation
  AR : Argentine model
  CH : Chinese model
  EE : East European model
  FR : French model
  TW : Taiwan model
  JE : Tourist model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3323-653-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C102	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C103	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C104	1-126-246-11	ELECT CHIP	220uF	20%	4V
C105	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C106	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C107	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C201	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C202	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C203	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C204	1-126-246-11	ELECT CHIP	220uF	20%	4V
C205	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C206	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C207	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C301	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C304	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C306	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C307	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C308	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C310	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C311	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C312	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C314	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C315	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C316	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C317	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C318	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C319	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C320	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C323	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C324	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C325	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C326	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C334	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C335	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C501	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C502	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C504	1-115-169-11	TANTALUM	10uF	20%	6.3V
C505	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C506	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C509	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C510	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C511	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C513	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C514	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C515	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C516	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C517	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C518	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C519	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C521	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C522	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C523	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C525	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C526	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C529	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C601	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C602	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C603	1-137-760-11	CAP-CHIP	100PF	5%	100V
C604	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C606	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C607	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C608	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C609	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C610	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C611	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C612	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C613	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C614	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C617	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C618	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C619	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C620	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C621	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C622	1-115-169-11	TANTALUM	10uF	20%	6.3V
C624	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C701	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C702	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C703	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C705	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C706	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C707	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V
C708	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C709	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C710	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C711	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C712	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C713	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C715	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C801	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C802	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C803	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C804	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C805	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C806	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C807	1-164-849-11	CERAMIC CHIP	9PF	0.5PF	16V
C808	1-164-849-11	CERAMIC CHIP	9PF	0.5PF	16V
C809	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C810	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C811	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C813	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C814	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C815	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C816	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C817	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C818	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C819	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C820	1-127-772-11	CERAMIC CHIP	0.033uF	10%	10V
C821	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C822	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C823	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C824	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C825	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C826	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C828	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C829	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C830	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C851	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C853	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C854	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C855	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C856	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C902	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C903	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C904	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C905	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C906	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C907	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C908	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C909	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C910	1-115-169-11	TANTALUM	10uF	20%	6.3V
C911	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C912	1-115-169-11	TANTALUM	10uF	20%	6.3V
C913	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C914	1-128-964-11	TANTAL. CHIP	100uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C915	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C916	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C917	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C918	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C919	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C920	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C922	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C923	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C924	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C925	1-126-246-11	ELECT CHIP	220uF	20%	4V
C926	1-126-246-11	ELECT CHIP	220uF	20%	4V
C927	1-126-246-11	ELECT CHIP	220uF	20%	4V
C928	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C929	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C930	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C931	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C932	1-128-964-11	TANTAL. CHIP	100uF	20%	6.3V
C933	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN501	1-573-360-21	CONNECTOR, FFC/FPC 20P			
CN701	1-573-355-11	CONNECTOR, FFC/FPC 15P			
CN801	1-573-354-11	CONNECTOR, FFC/FPC 14P			
		< DIODE >			
D101	8-719-056-72	DIODE UDZ-TE-17-2.4B			
D201	8-719-056-72	DIODE UDZ-TE-17-2.4B			
D301	8-719-066-17	DIODE FTZ6.8E-T148			
D601	8-719-081-35	DIODE MA2YD1700LS0			
D602	8-719-081-35	DIODE MA2YD1700LS0			
D603	8-719-081-33	DIODE MA2YD1500LS0			
D604	8-719-081-33	DIODE MA2YD1500LS0			
D802	8-719-017-58	DIODE MA8068-TX			
D901	8-719-081-33	DIODE MA2YD1500LS0			
D902	8-719-081-33	DIODE MA2YD1500LS0			
D903	8-719-420-51	DIODE MA729-TX			
D904	8-719-081-33	DIODE MA2YD1500LS0			
D905	8-719-081-33	DIODE MA2YD1500LS0			
D906	8-719-081-33	DIODE MA2YD1500LS0			
D908	8-719-073-01	DIODE MA111-TX			
		< JUMPER RESISTOR >			
FB301	1-216-864-11	SHORT	0		
FB302	1-216-864-11	SHORT	0		
FB303	1-216-864-11	SHORT	0		
FB304	1-216-864-11	SHORT	0		
FB801	1-216-864-11	SHORT	0		
FB802	1-216-864-11	SHORT	0		
FB803	1-216-864-11	SHORT	0		
FB804	1-216-864-11	SHORT	0		
FB806	1-216-864-11	SHORT	0		

MAIN

Ref. No.	Part No.	Description			Remark
		< IC >			
IC301	8-759-694-88	IC AK5354VT-E2			
IC302	8-759-598-15	IC TA2131FL(EL)			
IC501	8-759-689-67	IC SN761057DBT			
IC601	8-759-698-60	IC XPC18A22FCR2			
IC701	8-759-698-62	IC SC111257FCR2			
@ IC801	8-752-410-50	IC CXD2671-204GA			
IC804	8-759-445-94	IC AK6480AM-E2			
IC805	8-759-196-97	IC TC7SH32FU-TE85R			
IC901	8-759-698-61	IC XPC18A32FCR2			
		< JACK >			
J301	1-793-619-21	JACK (LINE IN (OPTICAL))			
J302	1-794-084-31	JACK (🎧)			
J901	1-785-383-11	JACK, DC (POLARITY UNIFIED TYPE)			(DC IN 3V)
		< COIL >			
L301	1-414-398-11	INDUCTOR	10uH		
L303	1-414-398-11	INDUCTOR	10uH		
L501	1-414-398-11	INDUCTOR	10uH		
L502	1-414-398-11	INDUCTOR	10uH		
L601	1-419-959-11	INDUCTOR	6.8uH		
L602	1-414-398-11	INDUCTOR	10uH		
L701	1-414-400-11	INDUCTOR	22uH		
L702	1-414-400-11	INDUCTOR	22uH		
L703	1-410-389-31	INDUCTOR CHIP	47uH		
L704	1-410-389-31	INDUCTOR CHIP	47uH		
L801	1-414-398-11	INDUCTOR	10uH		
L802	1-414-398-11	INDUCTOR	10uH		
L901	1-469-367-11	INDUCTOR	10uH		
L902	1-414-398-11	INDUCTOR	10uH		
L903	1-419-952-21	INDUCTOR	68uH		
L904	1-469-426-11	INDUCTOR	100uH		
L905	1-419-949-11	INDUCTOR	22uH		
		< TRANSISTOR >			
Q301	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q302	8-729-046-49	FET FDV304P			
Q501	8-729-922-10	TRANSISTOR 2SA1577-T106-QR			
Q601	8-729-046-43	FET HAT2051T-EL			
Q602	8-729-046-42	FET HAT2050T-EL			
Q603	8-729-053-71	FET TS8K1TB			
Q851	8-729-429-44	TRANSISTOR XP1501-TXE			
Q902	8-729-046-45	FET SI2302DS-T1			
Q903	8-729-042-81	FET FZT788BTC			
		< RESISTOR >			
R102	1-218-990-11	SHORT	0		
R103	1-218-967-11	RES-CHIP	15K	5%	1/16W
R105	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R106	1-218-929-11	RES-CHIP	10	5%	1/16W
R107	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R108	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R109	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R110	1-218-990-11	SHORT	0		
R111	1-218-990-11	SHORT	0		
R112	1-218-969-11	RES-CHIP	22K	5%	1/16W
R202	1-218-990-11	SHORT	0		
R203	1-218-967-11	RES-CHIP	15K	5%	1/16W
R205	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R206	1-218-929-11	RES-CHIP	10	5%	1/16W
R207	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R208	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R209	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R210	1-218-990-11	SHORT	0		
R211	1-218-990-11	SHORT	0		
R212	1-218-969-11	RES-CHIP	22K	5%	1/16W
R301	1-218-990-11	SHORT	0		
R303	1-218-935-11	RES-CHIP	33	5%	1/16W
R304	1-218-990-11	SHORT	0		
R306	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R307	1-218-941-11	RES-CHIP	100	5%	1/16W
R308	1-218-941-11	RES-CHIP	100	5%	1/16W
R309	1-218-941-11	RES-CHIP	100	5%	1/16W
R312	1-218-990-11	SHORT	0		
R313	1-218-989-11	RES-CHIP	1M	5%	1/16W
R314	1-218-953-11	RES-CHIP	1K	5%	1/16W
R315	1-218-953-11	RES-CHIP	1K	5%	1/16W
R316	1-218-953-11	RES-CHIP	1K	5%	1/16W
R317	1-218-990-11	SHORT	0		
R501	1-218-446-11	METAL CHIP	1	5%	1/16W
R502	1-218-971-11	RES-CHIP	33K	5%	1/16W
R504	1-208-703-11	METAL CHIP	6.8K	0.5%	1/16W
R505	1-218-977-11	RES-CHIP	100K	5%	1/16W
R506	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R508	1-218-990-11	SHORT	0		
R510	1-218-953-11	RES-CHIP	1K	5%	1/16W
R601	1-218-983-11	RES-CHIP	330K	5%	1/16W
R602	1-219-724-11	METAL CHIP	1	1%	1/4W
R603	1-218-965-11	RES-CHIP	10K	5%	1/16W
R604	1-218-990-11	SHORT	0		
R605	1-218-990-11	SHORT	0		
R608	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R610	1-218-965-11	RES-CHIP	10K	5%	1/16W
R611	1-216-797-11	METAL CHIP	10	5%	1/16W
R616	1-218-945-11	RES-CHIP	220	5%	1/16W
R618	1-218-990-11	SHORT	0		
R801	1-218-990-11	SHORT	0		
R804	1-218-990-11	SHORT	0		
R805	1-218-981-11	RES-CHIP	220K	5%	1/16W
R806	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R807	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R808	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R809	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R810	1-218-949-11	RES-CHIP	470	5%	1/16W

@ Replacement of CXD2671-204GA (IC801) used in this set requires a special tool.
Therefore, it cannot be replaced.

Ref. No.	Part No.	Description			Remark
R811	1-218-929-11	RES-CHIP	10	5%	1/16W
R812	1-218-965-11	RES-CHIP	10K	5%	1/16W
R813	1-218-977-11	RES-CHIP	100K	5%	1/16W
R814	1-218-977-11	RES-CHIP	100K	5%	1/16W
R815	1-218-929-11	RES-CHIP	10	5%	1/16W
R818	1-218-981-11	RES-CHIP	220K	5%	1/16W
R819	1-218-953-11	RES-CHIP	1K	5%	1/16W
R820	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R821	1-218-945-11	RES-CHIP	220	5%	1/16W
R823	1-202-974-11	RES-CHIP	3.3M	5%	1/16W
R825	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R826	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R827	1-218-989-11	RES-CHIP	1M	5%	1/16W
R829	1-218-990-11	SHORT	0		
R830	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R831	1-218-990-11	SHORT	0		
R832	1-218-990-11	SHORT	0		
R833	1-218-990-11	SHORT	0		
R834	1-216-809-11	METAL CHIP	100	5%	1/16W
R837	1-218-983-11	RES-CHIP	330K	5%	1/16W
R838	1-218-990-11	SHORT	0		
R839	1-218-990-11	SHORT	0		
R840	1-218-990-11	SHORT	0		
R842	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R843	1-208-939-11	METAL CHIP	150K	0.5%	1/16W
R852	1-218-990-11	SHORT	0		
R905	1-218-949-11	RES-CHIP	470	5%	1/16W
R906	1-218-985-11	RES-CHIP	470K	5%	1/16W
R907	1-218-977-11	RES-CHIP	100K	5%	1/16W
R908	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R909	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R912	1-208-939-11	METAL CHIP	150K	0.5%	1/16W
R913	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R914	1-218-979-11	RES-CHIP	150K	5%	1/16W
R915	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R916	1-218-969-11	RES-CHIP	22K	5%	1/16W
R917	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R918	1-218-985-11	RES-CHIP	470K	5%	1/16W
R920	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R921	1-218-965-11	RES-CHIP	10K	5%	1/16W
R922	1-218-965-11	RES-CHIP	10K	5%	1/16W
R925	1-218-941-11	RES-CHIP	100	5%	1/16W
R927	1-218-981-11	RES-CHIP	220K	5%	1/16W
R928	1-218-977-11	RES-CHIP	100K	5%	1/16W
R929	1-218-989-11	RES-CHIP	1M	5%	1/16W
R931	1-218-990-11	SHORT	0		
R933	1-218-990-11	SHORT	0		
R936	1-218-990-11	SHORT	0		
R939	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
		< NETWORK RESISTOR >			
RB701	1-233-967-11	RES, NETWORK (CHIP TYPE) 10K			
RB702	1-233-959-11	RES, NETWORK (CHIP TYPE) 470			
RB703	1-233-973-11	RES, NETWORK (CHIP TYPE) 100K			
RB851	1-233-973-11	RES, NETWORK (CHIP TYPE) 100K			
		< SWITCH >			
S801	1-762-078-11	SWITCH, SLIDE (HOLD)			
S803	1-771-867-11	SWITCH, PUSH (1 KEY) (PROTECT DETECT)			
S805	1-762-947-11	SWITCH, PUSH (1 KEY) (HALF LOCK)			
S806	1-762-805-11	SWITCH, PUSH (1 KEY) (OPEN/CLOSE DETECT)			
		< FILTER >			
T901	1-416-405-21	FILTER, CHIP EMI (COMMON MODE)			
		< THERMISTOR >			
TH901	1-533-817-21	THERMISTOR			
		< VIBRATOR >			
X801	1-795-024-11	VIBRATOR, CRYSTAL (45.1584MHz)			
**********					
		MISCELLANEOUS			
		**********			
6	1-804-218-11	LCD MODULE			
114	1-679-762-11	MOTOR FLEXIBLE BOARD			
⚠120	X-3379-508-1	SERVICE ASSY, OP (LCX-4R)			
M601	8-835-706-01	MOTOR, DC SSM18A/C-NP (SPINDLE) (with TURNTABLE)			
M602	1-763-399-11	MOTOR, DC (SLED) (with GEAR)			
M603	1-763-400-21	MOTOR, DC (OVER WRITE HEAD UP/DOWN)			
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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-418-784-11	ADAPTOR, AC (AC-MZR55) (CH)	
⚠	1-418-785-12	ADAPTOR, AC (AC-MZR55) (AR)	
⚠	1-476-275-11	ADAPTOR, AC (AC-MZR55) (AEP,FR,EE)	
⚠	1-476-277-11	ADAPTOR, AC (AC-MZR55) (UK)	
	1-779-504-11	CONNECTOR, OPTICAL (AEP,UK,AR,FR,EE)	
	1-779-504-51	CONNECTOR, OPTICAL (CH)	
	1-794-451-11	CONNECTOR, OPTICAL (AEP,UK,AR,FR,EE)	
	1-794-451-51	CONNECTOR, OPTICAL (CH)	
	3-021-018-11	LABEL, FRANCE (FR)	
	3-223-746-11	MANUAL, INSTRUCTION (ENGLISH) (US,CND, AEP,UK,CH,EE)	
	3-223-746-21	MANUAL, INSTRUCTION (FRENCH) (CND,AEP,FR)	
	3-223-746-31	MANUAL, INSTRUCTION (GERMAN,DUTCH, ITALIAN) (AEP)	
	3-223-746-41	MANUAL, INSTRUCTION (PORTUGUESE, SPANISH) (AEP,E,AR)	
	3-223-746-51	MANUAL, INSTRUCTION (SWEDISH,FINNISH) (AEP)	
	3-223-746-61	MANUAL, INSTRUCTION (RUSSIAN,HUNGARIAN, POLISH,CZECH,SLOVAKIAN) (EE)	
	3-223-746-71	MANUAL, INSTRUCTION (ENGLISH, TRADITIONAL CHINESE,KOREAN) (E,TW)	
	3-223-746-81	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (CH)	
	3-223-746-91	MANUAL, INSTRUCTION (ENGLISH,SPANISH, TRADITIONAL CHINESE,KOREAN) (E)	
	8-953-301-92	RECEIVER, EAR MDR-E805LP/K2 SET (CND,AEP,UK,E,CH,TW,AR,FR,EE)	
	8-953-775-95	HEAD SET MDR-026LP/1 SET (US)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001. 01	New